PROCEDURAL RATIONALITY AS A MEANS FOR EVIDENCE-BASED
MANAGEMENT IN CONFLICTED DECISION-MAKING:
A MIXED-METHODS STUDY

by

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Submitted in partial fulfillment of the requirements
For the degree of Doctor of Philosophy

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May, 2015
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Dedication

This work is dedicated to Jeff Kocian who is truly the Saint of Desperate Causes. His caring presence and influence in my early life surely set me on the road to success.
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Acknowledgments

I have spent the better part of twenty years invested in the process of human growth and development through my career as a counselor, college professor and program director. On that journey I have been intimately and intensely involved with the question, “What produces change?” and have learned that the process of change is the same regardless of the context—client, student, organization—it’s all about the quality of relationships. Likewise, the power of relationship was the determining factor in my doctoral success. I am grateful to all for the learning, support and guidance so graciously provided.

Paul Salipante joined with me on the first leg of the journey. He served as my compass as we navigated the landscape of research literature related to my interests. Of his many positive qualities, I am most appreciative for his boundless enthusiasm for learning, his wealth of knowledge, and his nurturing generativity. I take with me his systematic discipline of deconstructing research articles and writing research memos that helped me define my scholarly point of view.

Dick Boland joined with me for the second leg to set the heading for our journey. He served as my telescope to the universe of qualitative research. He had a way of gathering the light, whether as a mirror or as a lens, to pull into focus the intersection between my interests and the classics in management theory. Of his many positive qualities, I am most appreciative for his easy-going manner, ability to make even the most complex theories understandable, and his willingness to help me ‘stand on his shoulders’ to gain a broader perspective of patterns forming in the data. I wish I could
take with me his uncanny ability to form interview questions that sift out the nuggets of gold from mire in the stream.

Nick Berente came aboard for the third leg. He served as a sextant for working the complicated angles of model-building. Of his many positive qualities, I am most appreciative for his ability to see multiple realities in any problem of practice, his clarity in identifying lines of reasoning, and his willingness to share his brilliance. I will take with me the detailed statistical toolbox he so generously provided.

Kalle Lyytinen led the final leg of the journey. He served as an armillary—a navigational mastermind—as we worked to identify logical patterns of increasing complexity in the intersecting longitudes and latitudes of the data. Of his many positive qualities, I am most appreciative of his laser-like focus that can cut to the heart of any argument, his incredible collaborative spirit, and his intuitive ability to know what I needed before I could see it myself. I will take with me his sense of responsibility that fuels an ethic of citizenship in the scholarly community.

Kalle also served as a much needed anchor in some very stormy seas related to an extended health challenge. As I struggled to take even the tiniest of steps in the writing, Kalle’s simple words of faith—“Just keep writing”—served as a much needed beacon of light on the path. While my recovery was slow, his patient, persistent, and powerful guidance kept me moving forward. His unfaltering expectations and measured feedback led to exponential growth in my writing unlike any other academic experience. So, while I am appreciative of all my advisors, the bonds of gratitude, respect and trust have taken on a much deeper quality with Kalle.
Finally, where would I be without Sue Nartker and Marilyn Chorman? I will be forever grateful for Sue’s tireless cheerleading. Her unwavering belief in me provided the wind in my sails on the darkest of days when energy was scarce. Marilyn, of course, was master of the ship. Without her attention to details and dates, we would have never left port.

I am also grateful for the financial assistance and community of scholars provided by the Mandel-Weatherhead Non-Profit Fellowship as well as the half-year sabbatical supported by Lakeland Community College. Alexis Antes was incredibly responsive and skilled in the final formatting at each leg of the journey that was a much needed pressure valve during crunch times. James Gaskin was equally responsive in providing assistance with data files, software programs, and macros to help with the number crunching. My cohort classmates were creative and valued companions adding depth and color to the scholarly landscape. Finally, my students and colleagues at Lakeland were a constant source of motivation and inspiration. A special thank you is extended to Morris W. Beverage, EDM for setting me on this path and to Chuck Fye for keeping my eyes on the prize.
Procedural Rationality as a Means for Evidence-Based Management in Conflicted Decision-Making: A Mixed-Methods Study

Abstract

by

ALICE J. WALKER

Evidence-based management (EBMgt) has been advanced as a way to utilize empirical research findings to propose an ‘optimal’ solution to a problem within a centralized authority structure. In shared leadership settings, decisions are typically complex and punctuated by divergent perspectives emerging from within the organization. In these circumstances, the substantively rational decisions advanced by EBMgt must also be infused with commitment for coordinated action among diverse and often conflicted interests. Is EBMgt a viable approach in these circumstances?

This thesis reports on a three-phase mixed methods research project into evidence-based shared decision making in organizations, and the conditions under which EBMgt practices can bring about commitment to a decision. In the first phase, we conducted an inductive, grounded analysis of interviews with community college leaders to find that it is the process of inquiry, rather than the evidence itself, that emerges as the important driver of commitment to a decision. In this study we propose a fundamentally different view of evidence in management decisions—evidence not as a predetermined
solution to be implemented but instead as a boundary-object to focus attention and dialogue throughout the process.

In the second study, we conduct a cross-sectional comparative survey of 139 public community college faculty, staff and administrators. We find support for the importance of the collaborative process in driving commitment when using research evidence in shared decision making groups where conflict is present. In conflicted environments, the use of evidence in group decision making may actually erode the commitment necessary for decision implementation. However, we also discover that a process of joint inquiry involving collaborative search for and analysis of evidence can be effective in bolstering commitment. As such, this study identifies novel facilitative and restrictive conditions for implementing EBMgt in complex decision environments.

In the third study, we focus on unpacking the idea of conflict. We distinguish between affective and cognitive that emerge during the decision process as well as conflict based in established contending logics of action that precipitate polarized role identities in group members. We thus develop a model of EBMgt practices in shared decision making scenarios where conflict is present and commitment is needed for forward progress. We empirically test and validate this model utilizing a serial mediation in a structural equation model. Indirect effects reveal a complex pattern of relationships. First, conflicted logics of action decrease the use of EBMgt in practice. However, when shared decision groups do use evidence through collaborative search and analysis it strengthens individual commitment to the decision as well as willingness to introduce the routine into subsequent shared decision groups within the organization. Second, conflicted logics of action lead to increased levels of affective conflict which, in turn,
fuels use of evidence in the decision process but also damages commitment necessary for decision implementation.

Overall, this thesis stretches the epistemological territory of EBMgt to include people, their activities and their relationships as key factors in the overall impact of EBMgt on organizational outcomes.

**Key words:** Evidence-based management; research-to-practice gap; shared leadership; shared governance; conflict; practice theory; procedural rationality; logics of action; phronesis; commitment; metaphor.
INTRODUCTION

The most recent definition of evidence-based management (EBMgt) conceptualizes the approach as, “A knowledge-intensive, capacity-building way to think, act, organize, and lead that will develop better managers and lead to effective and adaptive organizations (Rousseau, 2012: 3). From this perspective, the substantive quality of the decision rendered is but one consideration in the value of EBMgt. Building organizational capacity for effective action and adaptive organizational evolution are equally relevant concerns. Dominant theoretical frameworks for EBMgt typically center on decision making where a single manager (or professional) vested with centralized authority must make a decision. Evidence is used instrumentally to guide a technical decision.

Recent management literature, however, places the burgeoning nexus for most strategic decisions within shared leadership structures such as those found in top management teams, hospitals, colleges, cultural institutions and other pluralistic organizations (Denis et al., 2007; Denis, Langley & Sergi, 2012; Johnson et al., 2007; Lowendahl & Revang, 1998). What is different about these contexts is the interactive complexity generated by people with divergent, yet often equally valid, perspectives coming together to construct a joint decision (Lindblom & Cohen, 1979; Pache & Santos, 2013). The boundaries of problems, solutions, and outcomes frequently remain fluid while embedded in the turbulence of diverse interests, social norms and structures (March & Olsen, 1979; Mintzberg, Raisinghani & Theoret, 1976). Decisions often emerge through the interaction of interest, conflict and power where politics and persuasion trump reason (Elbanna, 2006). Is EBMgt a viable approach in these circumstances?
This thesis sets out to generate new understanding into a challenge originally set forth by Lindblom and Cohen (1979: 92): “How can scholarly research best be laid over professional expertise and “play a problem-solving role in tandem with interactive processes”? We examine the influence of interpersonal dynamics and conflict as experts and stakeholders with divergent perspectives engage with evidence toward construction of a mutually satisfactory decision. Research findings serve as evidence within an argument (Lindblom & Cohen, 1979) creating a boundary-object and catalyst for creative discussion that can lead to design of an effective solution that fits within the complex dynamics of a specific organization (Nicolini et al., 2012; Reckwitz, 2002; Stanovich, 2010; Star, 2010). Specifically, we examine the potential for EBMgt to create two outcomes: (1) increased individual commitment to a group decision that will motivate effective action; and, (2) increased individual willingness to re-create the EBMgt process in subsequent decisions groups facilitating adaptive organizational evolution. We identify processes by which, and conditions under which EBMGt promotes or hinders organizational performance in actual practice.

The research design is built from the pragmatism of a practice-perspective that focuses on the embodied concrete action of practitioners embedded in specific contexts (Gherardi, 2012; Jarzabkowski, 2005; Johnson et al., 2007; Reckwitz, 2002). We employ a sequential exploratory mixed-methods design through three phases of research. This approach provides an opportunity to discover patterns through inductive qualitative research that will inform hypotheses and instrument development to subsequently test through deductive methods of quantitative research (Johnson & Onwuegbuzie, 2004). Triangulation of complementary methods and converging findings counteracts potential
bias and provides greater richness than any single method alone (Creswell & Plano-Clark, 2007; Greene, Caracelli & Graham, 1989; 2008).

The primary research context is the collaborative quality committees comprised of faculty, staff and administrators within the academic governance system of community colleges. The dynamics within this context are characteristic of institutionalized pluralistic organizations that are distinct in their mix of professional autonomy and diffuse authority (Jarzabkowski & Seidl, 2008; Mintzberg, 1980). Uncharacteristic of settings studied thus far in the EBMgt literature, this setting is rich with elements identified in the literature to facilitate adoption of EBMgt and absent many of the identified barriers (Booth, 2011). As such, this context presents intriguing possibilities for examining the practice of EBMgt in a relatively ideal setting thereby allowing some of the more complex elements to stand out (Goldkuhl, 2011) and providing the potential to expand the scope of theory in this area.

The initial step in the research design is a qualitative study based in grounded theory methods to understand the unique individual and organizational characteristics that influence the interactional processes of EBMgt in pluralistic settings. Specifically, we ask, “How do college professionals source, evaluate and utilize information to make decisions about quality improvement practices at their institution?” Our hope is to identify the sources and types of information that college professionals use, discover how they define and determine the quality and relevance of that information, and describe how it influences the decision making process.

These results shape the second step in the research design--a cross-sectional quantitative survey to test the theoretical moderation model emerging from the first
study. This method allows query of a sufficient sample from multiple institutions at a single-point in time and permits sophisticated statistical analyses that can be generalized to other populations. Three questions are advanced: (1) Can the routines of EBMgt in practice create the commitment necessary to carry decisions through to implementation? (2) Can the performed routines of EBMgt inspire individuals to re-enact them in future decisions groups so as to advance EBMgt throughout the organization? (3) Can the presence of competing interests change these relationships? Our hope is to identify a condition under which EBMgt in practice within pluralistic organizations promotes or hinders organizational capacity for effective action and adaptive organizational evolution.

These results then shape the third step in the research design—a finer grained analysis of the data to test a serial, chained mediator model (Hayes, 2013). This approach allows us to investigate both the direct and indirect effects of a temporal sequence of mediators (Hayes, 2013). Two main questions are advanced: (1) Can long-standing conflict between professional groups within an organization influence the implementation of evidence-based routines in pluralistic settings? (2) Can long-standing conflict between professional groups within an organization create interpersonal conflict (in the form of affective and cognitive conflict) that influences EBMgt in practice and subsequent outcomes in pluralistic organizations? Our hope is to identify the factors and processes by which EBMgt in practice within pluralistic organizations promotes or hinders organizational capacity for effective action and adaptive organizational evolution.

Collectively these studies offer support for Lindblom and Cohen’s (1979: 95) proposition that political and social processes are not simply “amusing peripheral phenomena” to the task of systematic research analysis by professionals. Instead,
political and social processes can serve as significant constraints for EBMgt. We discover that in these environments, the use of evidence in group decision making may actually erode the commitment necessary for decision implementation. Further, we find that long-standing conflict between professional groups within an organization can reduce the likelihood that EBMgt strategies will even be employed in group decision making. This conflict can also generate an undercurrent of affective conflict that increases deployment of evidence, but damages the commitment necessary for decision implementation. We also discover the value of a new routine to EBMgt—collaborative search for evidence. This joint activity increases productive engagement between diverse interests and strengthens individual commitment to the decision as well as willingness to introduce this activity into other shared decision making groups in the organization. As such, we identify several so far unexplored contextual and interpersonal elements that support or impede EBMgt outcomes in complex shared decision making environments.

The research journey on which we embark represents a significant departure from dominant voices in the current EBMgt literature. These voices focus on the instrumental use of evidence to inform decision making by a single executive and improve directives for instrumental solutions to technical problems. From this perspective, the key challenge is one of knowledge transfer—getting the knowledge into the hands of practitioners. Thus, much of the research on EBMgt focuses on information and addresses a variety of elements likely to create conditions conducive for research dissemination and uptake.

Instead, we view evidence as a boundary-object and catalyst for creative discussion that can lead to design of an effective decision that fits within the complex
dynamics of a specific context. This approach acknowledges the textured complexity of interconnected social worlds and conflicted interests inevitably found in organizations. The purpose of this thesis introduction is to establish the foundation for this departure, and hence the theoretical contribution (Corley & Gioia, 2011).

Following recommendations by Alvesson & Sandberg (2011: 247), we adopt a ‘problematizing’ approach for the literature review that will “identify and challenge assumptions underlying existing literature.” We examine the implications of the root metaphor for EBMgt—the bridge between research and practice—along with embedded assumptions and paradigmatic limitations it creates. A review of emerging studies leads to introduction of a new routine for EBMgt in shared decision making groups—the collaborative search for and analysis of evidence. We then turn our attention to the methodological framing, research design and overall findings before concluding with the introduction of a new metaphor with implications for the theory and practice of EBMgt.

**LITERATURE REVIEW**

**The Connection between Research & Practice**

The concept of evidence-based management (EBMgt) now spans over a decade in management research (Rousseau, 2006; Rousseau, 2012) but there is little evidence to demonstrate its effectiveness in practice (Reay, Berta & Kohn, 2009). One reason for this absence is the research-to-practice gap that spawned its development remains alive and well. Scholars continue to produce research and practitioners continue to make decisions without it. Of course, this shouldn’t be surprising. Empirical study on the gap now spans over seventy years and sixteen special journal forums (Bartunek & Rynes, 2014; Beyer & Trice, 1982; Mann & Rensis, 1952; Rynes, Bartunek & Daft, 2001).
Conceptualizations of the challenge are so numerous that one group of researchers set about creating a map of the twenty-nine different terms used to describe it (Graham, Logan, Harrison, Straus, Tetroe, Caswell & Robinson, 2006). Nonetheless, the gap continues to exist and may even be expanding (Van de Ven & Johnson, 2006).

At center stage in the drama is the rigor, relevance and dissemination of ‘evidence’ (Learmonth & Harding, 2006; Rycroft-Malone et al., 2004; Reay et al., 2009). This starring role is essential for establishing a broad and deep body of research from which to draw in practice. Behind the scenes are scholars writing the story of how knowledge production and knowledge transfer impact eventual use, or non-use, of ‘evidence’ in organizational practice (Amara, Ouimet & Landry, 2004; Rogers, 2009; Wilson, Petticrew, Calnan & Nazareth, 2010). Systematic reviews along with collaborative partnerships between researchers and practitioners have been identified as building materials for a bridge to span the gap (Briner & Denyer, 2012; Rousseau, Manning & Denyer, 2008; Rynes, Bartunek & Daft, 2001). Much has been accomplished in this regard. Yet, like The Creature from the Black Lagoon lurking in the scholarly jungle, the research-to-practice gap remains just as black-and-white as the cinematic splendor in which the movie was originally filmed. Scholarly voices continue to dominant light on the screen while equally essential practitioner perspectives are left to the shadows. The metaphorical bridge thought to span ‘the great divide’ between these seemingly disparate voices (Rynes, Bartunek & Daft, 2001) now appears to be a bridge too short for these post-modern times where value is found in multiple paths to knowledge creation (Grenz, 1996; Nonaka, von Krogh & Voelpel, 2006).
The Bridge Metaphor

A literal bridge provides a way to cross over otherwise insurmountable obstacles such as terrain or elevation. It is an immovable structure constructed from durable materials connecting two stationary points that can “withstand, overcome and exploit the forces to which it is subjected,” (Brown, 1993: 14). Individuals can then cross from here to there and back again for many years to come. As such, it provides an apt image for visualizing a mode of conveyance between two unreachable positions. The metaphor of a bridge is used extensively to conceptualize the challenge of spanning the distance between worlds of research and practice.¹

From this perspective, EBMgt is a top-down process (as illustrated in Figure 1) whereby scholars engage in a rich and deep process of inductive, deductive and abductive reasoning to produce research. They then disseminate findings and systematic reviews to executives that inform decision making and improve directives for instrumental solutions to technical problems.² The role of the practitioner is, however, thought to be far more shallow and unidimensional. The practitioner is viewed simply as an information-processor whereby knowledge provided by scholars is passively assimilated to rationally guide decision making. The key challenge is thought to be knowledge transfer—getting the knowledge into the hands of practitioners.

¹ A Google scholar search for “bridge gap between research and practice” yields over a million results.
² Interestingly, a ‘bridge’ is also the upper deck on a ship where the captain directs the voyage.
Thus, much of the research on EBMgt focuses on information and addresses a variety of elements likely to create conditions conducive for research dissemination and uptake including the nature of evidence, characteristics of individuals, and features of organizations (Estabrooks, Floyd, Scott-Findlay, O’Leary & Gushta, 2003; Innvaer, Gunn, Trommald & Axman, 2002; Meijers, Janssen, Cummings, Wallin, Estabrooks & Halfens, 2006).

This framework offers exceptional value for decision improvement when three essential conditions are met. First, the decision at hand involves a relatively straightforward ‘technical’ or well-structured problem. Second, the ‘power of the evidence’ can be taken for granted based on cause-and-effect pairs that emerge from rigorous empirical investigation or systematic literature review. Third, the decision is made by a single
individual in a relatively centralized authority and power structure. That is, the executive is an independent collector and repository of information. Stakeholders are viewed as providers of information rather than collaborative actors who have investment in the decision (Potworowski & Green, 2012; Tourish, 2012). However, these conditions are generally the exception rather than the rule in the complex world of organizational management.

**Beyond A Flat World of Practice**

“The evolution of bridges can be traced back to primitive man felling a log across a brook, and the proud history includes the Roman aqueducts. But modern bridges are made neither of available logs nor of piles of stones. They are deliberate designs in concrete and steel arranged to suit the functional, aesthetic, and economic demands of our complex society. Because new demands are constantly being made—for a larger, more attractive, or less expensive bridge—it is not always possible, even if desirable, for the designer merely to copy what has been done successfully in the past. Copying may work for an ordinary highway bridge, but it clearly will not do when the highway is to cross a wider bay or a deeper ravine than ever spanned before. Then there are no examples to copy; there is not proven experience to follow.” Petroski (1982: 67)

On the whole, management challenges tend to be steeped in uncertainty and ambiguity rather than well-structured problems that lend themselves to converging research findings over time. Empirical research, characterized by the sequential deliberation of mathematic-like certainties depicted in Aristotle’s *episteme*, is often unsuited for practice settings. This is particularly true when we consider the “frantically accelerating pace of change” created by our global economy and knowledge society (Hamel, 2007: 47). As reflected in Petroski’s quote above, high fidelity replication may work for ordinary challenges but it clearly will not do when the landscape is constantly changing. There has also been criticism that problems tackled by academic research are
not relevant for practice (Gulati, 2007; Starkey & Madan, 2001; Vermeulen, 2005). The scholarly goal of advancing theory in a specific discipline is often a mismatch for the concrete skills needed for practice in a specific context that is more characteristic of Aristotle’s intellectual virtue of *techne* (Flybvjerg, 2001). These developments highlight the need for a management approach that can think on its feet—one that can reflexively evolve with the pace and flow of constant change that characterizes the practice world today—while still honoring the value found in Aristotle’s *episteme*. To meet these needs, we need to deepen scholarly appreciation for the practitioner-side of the bridge.

The pace of change is not the only challenge; we must also consider the structure itself. The bridge metaphor relies heavily on the dominance of scholars and their epistemological assumption of a ‘flat’ world of practice on the ‘other side’ of the bridge (Empson, 2013). Practitioners and settings of all kinds and sorts are lumped together in one category under ‘practice’ and organizations are characterized by a monotone depiction of bureaucracy and chains of command. Yet, we know the real world is far more complex. Even builders of literal bridges understand that such feats of engineering are embedded not only in the “complex physical and natural world we call the environment” but also in the “messy and uncertain” world of human relationships (Blockley, 2010: 248). Both logical and practical rigor are needed for success. Do we really expect organizational management that must account for the free will of human intention to require any less?³

The bridge metaphor also fails to account for the connection between ‘knowing’ and ‘doing.’ In the practice world, creating coordinated sustained action among a group

of people is essential for organizational success. In the end, as observed by Drucker (1955: 120), “Every decision of the manager is aimed at bringing about action by people.” All too often we assume that people will be moved to effective action through simple presentation of a new truthful fact. Yet, there is an abundance of organizational research that indicates decisions—even the better ones—do not automatically lead to action (Laroche, 1995; Van de Ven & Sun, 2011). There is also ample evidence that shows processes thought to promote rational decisions may actually erode the commitment necessary for effective implementation (Korsgaard, Schweiger & Sapienza, 1995). Time, resources, and expertise will be invested in a reaching a decision that may never be implemented.

This perspective becomes even more salient when we consider that recent management literature places the burgeoning nexus for strategic decisions within a plurality of actors. In professional service firms, strategic decision-making takes place within decentralized structures of shared leadership that are distinctive in their mix of professional autonomy and diffuse authority. Similar arrangements are found in hospitals, colleges, cultural institutions and other pluralistic organizations. These collaborative groups are faced with “large, expensive and precedent setting [choices] producing ambiguity about how to find a solution and uncertainty in the solution’s outcomes” (Nutt & Wilson, 2010: 4; Mintzberg et al., 1976). As such, decisions of these groups fall within the realm of strategic management, but have yet to be considered in models of EBMgt (Morris et al., 2010: 289). In addition, recent recommendations in the EBMgt literature to include stakeholders in decision making processes as partners rather
than consultants will serve to make these issues even more significant (Hodgkinson, 2012).

Whenever different interests are represented, communication and decision making are quickly influenced by politics (Carlile, 2004; Langley, 1989; Van de Ven, 2007). Decisions often emerge through the interplay of partisan agendas where rationality becomes less about principles of formal logic and more about the realities of power (Allison, 1969; Langley et al., 1995; Royer & Langley, 2008). These agendas are often rooted in collective professional identities that enable and constrain individual behavior within organizational practices (Greenwood & Miller, 2010; Pache & Santos, 2010; Thornton & Ocasio, 2008; Townley, 2002). Characteristic drivers for information use include asserting authoritative direction toward a predetermined position as well as communicating institutional responsibility and legitimacy to stakeholders (Feldman & March, 1982; Weiss, 1979). Evidence may be brought to the table much like the Wonderland gardeners painting the white roses red to please the Queen of Hearts—what Weiss (1979) described as ‘grist for the mill’ of whatever agenda is currently in play. As such, EBMgt may simply become an exercise in ‘dueling with data’ where each interest arrives at the table equipped with their research to support their predetermined position (Baker, Ginsburg & Langley, 2010). Precepts of social psychology suggest these dynamics could serve to solidify and further polarize initially divergent positions (Lord, Ross & Lepper, 1979). Consequently, common points of alignment crucial for effective shared leadership can be lost (Staw, 1976). Hence, in these scenarios, we face a realistic concern that EBMgt could potentially do more harm than good. Should the recent knowledge transfer recommendation to hone persuasive skills for argumentation around
the evidence be picked up on the practice-side of the bridge (Baughman, Dorsey and Zarefsky, 2011), it may actually serve to enflame conflicts between interests and further alienate evidence from the process.

In these circumstances, interpersonal conflict is a common outcome and can prevent forward movement in decision making (Brown, 1983; Jehn, 1995; Pache & Santos, 2010; Tourish, 2012). Thus, communication that takes place around the evidence, particularly when there is conflict between the interests, is of key importance. On one hand, cognitive conflict in the form of lively and sound debate around different thoughts and opinions can become a constructive element of group processes for the depth and breadth it brings to discussion (Russo & Schoemaker, 2002). On the other hand, affective conflict in the form of personalized disputes can create destructive elements because of the resentment and distrust it brings to relationships (Amason & Sapienza, 1997; Schwenk & Valacich, 1994). The type of conflict, the context in which it occurs, and the methods used to seek resolution all play a part in the overall impact of conflict (DeDreu & Weingart, 2003; DeWit, Greer & Jehn, 2012).

**Figure 2: Embedded Layers of Conflict**
Clearly, the world of practice contains much more depth than current EBMgt models acknowledge or take into account. Each individual is embedded in a role or professional identity that is embedded in the shared decision making context that is, in turn, embedded in the organizational context (see Figure 2). Current EBMgt theory suggests the episteme of evidence will withstand and overcome these forces. However, decision making research suggests competing interests and biased perceptions are likely to be a challenge in the complex dynamics of interpersonal relationships found in the real world of practice (Potworowski & Green, 2012; Heath, Larrick & Klayman, 1998; Kray & Galinsky, 2003; Schwenk, 1999). Hence, EBMgt needs to address more than just the types and sources of information used in decision making.

**Emerging Studies in EBMgt**

Attention to the influence of interpersonal dynamics in EBMgt practice is beginning to emerge within the fields of social work, human ecology and health care (Bellamy, Mullen, Satterfield, Newhouse, Ferguson, Brownson & Spring, 2013; Deane, Harris & Russell, 2010; McDaniel & Lanham, 2009). These studies demonstrate the need for and importance of engaging diverse perspectives in a collaborative process of inquiry and knowledge creation around the object of research evidence.

First, Bellamy, Mullen, Satterfield, Newhouse, Ferguson, Brownson and Spring (2013) introduce a trans-disciplinary model of evidence-based decision making to the field of social work. The model is grounded in an ecological framework that considers the merits of research-based recommendations in light of multiple contextual factors. They explain,
“Decision making is at the center of the model and is seen as the cognitive action that moves evidence into contextualized practices. Rather than being based on the skill (or whim) of an individual professional, decision making is seen as a shared decisional process that integrates research evidence with client, resource, and contextual considerations. Its central position in the figure signifies the great difficulties and practical challenges in reconciling the various inputs needed to make evidence-based decisions about clinical care, public health, or public policy” (Brown et al., 2013: 429).

Second, McDaniel and Lanham (2009) approach EBMgt from the vantage point of conceptual use of evidence within the complex adaptive systems in the health care field. They, too, draw the distinction between EBMgt implemented in organizations with hierarchical structures versus organizations facing complex problems under conditions of continuous change. Rather than thinking about evidence as a directed solution, they suggest “evidence should be used as a seed for informed conversation, a guide for local action, and a strategy for learning” (McDaniel & Lanham, 2009: 216). They recommend using evidence for initiating “creative, locally relevant dialogue” that effectively engages the divergent, but equally valid, perspectives of those in positions of shared leadership within the organization (McDaniel & Lanham, 2009: 217). In this model, “evidence from scientific inquiry is used to design experiments and pilot studies, help managers evaluate results, and help identify ways to extend insights beyond the original evidence…updating one’s beliefs as new information (evidence) becomes available” (McDaniel & Lanham, 2009: 217). Diverse viewpoints are viewed as a potential source of resourcefulness for creation of a new hybrid of coherent knowledge integrating empirical rigor and situational relevance. Hence, interactive elements work in tandem with research findings to influence decisions.
Third, Brown, Deane, Harris, and Russell (2010: 5) employ a trans-disciplinary approach to decision making in the field of human ecology where “modes of inquiry have become sharply divided among compartmentalized interests, competition for resources and self-justifying belief systems.” This approach mirrors the process of scientific discovery but strives for emergent knowledge that is more than the sum of its parts where the final product is “like a cake in which the ingredients are no longer distinguishable” (Choi & Pak, 2006: 306). As such, there are strong elements of social construction of knowledge (Berger & Luckman, 1966). A group of people in a shared leadership structure construct a problem statement. They then jointly search for and analyze empirical evidence relevant to the problem at hand, in light of the requirements and constraints of the context in which it is occurring. Thus, both the problem definition and solution are subject to a holistic pastiche of perspectives that can be juxtaposed and recombined into new knowledge. As a result, a new paradigm for action is created that is relevant and appropriate for the resources and limitations of the organization (Choi & Pak, 2006).

The management field has yet to embark on similar lines of empirical study. However, a recent commentary based on reader response theory and the rhetorical inquiry of science highlights similar themes. Trank (2014) discusses the challenge and unanticipated consequences of expecting professionals to passively accept research findings at face value without active consideration of context and ethics, particularly when systematic reviews “scrub context, morals and politics from analysis to deliver a ‘consensus’ result” (Trank, 2014, 384). While context and ethics are included in the types of information that should be considered in EBMgt (Briner & Rousseau, 2009),
contradictory messages sent by “what works tropes” imply one-size-fits-all solutions (Trank, 2014, 384-5). Academic texts, according to Trank, are more than “simple conveyance of information”; they are arguments subject to “reconstruction and creation of meaning” by the reader (Trank, 2014, 386, 387).

“Theories in rhetorical and literary criticism argue that how we read and interpret what we read is very much a function of who we are, where we are, and what we are doing (Bleich, 1980; Fish, 1980). We have baggage in the form of biography and identity, along with needs that are local and immediate, and we actively use them all when we read. We do not simply construe meaning, we construct it (Fish, 1980)...The rhetoric of inquiry (or the rhetoric of scholarship) re-opens scientific texts to discussion” (Trank, 2014, 385, 386).

Clearly, from this perspective, complex issues of context and politics will influence both decision making and evidence-use in practice.

These studies begin to reveal a world of practice that is far more complex than the current flat, traffic patterns depicted by the ‘bridge’ metaphor. Clearly, the practitioner-side of the bridge contains its own process of inquiry and knowledge creation that mirrors the structure of the scholarly world but is grounded in social rather than cognitive views of learning. Hence, the challenge for EBMgt in practice where decision making is shared is to design a channel of communication for talking about empirical evidence. What is needed is a routine that allows for inquiry about how specific empirical findings can be used to create new practical knowledge appropriate for the complex, networked, local relationships of resources and capabilities. EBMgt of this sort will require the abductive logic of design thinking where the basic principles of ‘what is’ (e.g., research findings) are transformed (through cross-fertilization, synthesis and integration of expertise), into ‘what is possible and appropriate’ in the complexities of local context (Cross, 1982,
2011; Lawson, 2005; Lockwood, 2010). Importantly, this affordance of inquiry has been shown to engender the commitment necessary for effective implementation of decisions (Choo, 1996).

Procedural Rationality as a Form of Inquiry

“Inquiry,” according to a classic definition by Churchman (1971: 8), “is an activity which produces knowledge.” As such, new knowledge emerging from the collaborative adaptation of research findings to a specific organizational context can be considered just as valid as knowledge creation that emerges from rigorous scientific inquiry (Choo, 1996). From this perspective, evidence is not a predetermined solution but a boundary-object to focus attention and dialogue (see Figure 3).

Figure 3: Procedural Rationality

Interactive inquiry can be a tool of integration to create points of alignment between contending viewpoints through collaborative analysis, dialogue and knowledge creation. This ‘trans-disciplinary’ process is described as,

The collective understanding of an issue; it is created by including the personal, the local and the strategic, as well as specialized contributions to knowledge…[It] goes further than multi-disciplinary to include all validated constructions of knowledge and their worldviews and methods of inquiry…Rather than limiting the focus to any single avenue of inquiry, the requirement here is to be open to different ways of thinking, to use imagination to the full and to be receptive to new ideas and new directions that match the times” (Brown, Deane, Harris & Russell, 2010: 4).
This view is consistent with Simon (1979), who proposed the procedural rationality of *process* is just as necessary as the substantive rationality of *content* in engendering commitment to decisions. Procedural rationality facilitates active and ongoing collaborative inquiry and engagement between diverse constituents involved in shared decision making within a specific context, thereby cultivating commitment (Bazerman & Neale, 1983; Follett, 1924; Langley, Mintzberg, Pitcher, Posada & Macary, 1995). Rather than bringing evidence to the table to support a predetermined position, professionals engage in the collaborative search for and analysis of research evidence that integrates professional expertise and judgment into the process of discovery and application. The affordance of inquiry provides two key mechanisms for use of EBMgt in conflicted settings: (1) acknowledging the interactive complexity of equally valid competing logics and providing a sense of transparency and voice; and, (2) integration and adaptation of divergent findings to fit the current context of relationships and resources in the organization (Cohen, 2007; Ferlie et al., 2001; Follett, 1924; Lindblom, 1990). As such, procedural rationality holds promise as an interactive process that facilitates research use by a diverse group of professionals.

Of course, this approach stretches the epistemological territory of EBMgt by placing people, their activity and their relationships at the center of analysis and relegating evidence to a secondary, but no less important, role. We next explore the basis for our decision to move in this direction as a valid path of research inquiry.

**Philosophical Framing**

The most prevalent method for generating research questions is gap-spotting (Locke & Golden-Biddle, 1997; Sandberg & Alvesson, 2011). That is, identifying
missing pieces in the research literature landscape that can assist in developing a more complete understanding of a particular area. In our discussion above, we highlight some of the inadequacies in the EBMgt literature, particularly its use in shared decision making contexts where conflict and commitment to action are key elements in the process. We also introduce a new moderator (organizational conflict) and three new mediators for evidence use in practice (procedural rationality, cognitive conflict and affective conflict). While gap-spotting is the most common approach, it is not the only approach.

Building on Davis’ (1971, 1986) well-known studies on what makes research interesting or classic, Alvesson and Sandberg (2011) present ‘problematization’ as a method of generating research questions by identifying and challenging underlying shared assumptions in the literature (see Table 1). We began by describing the dynamics that gave rise to EMBgt nearly a decade ago; namely, the disparity between research production and its use in practice settings. We identified the shared but unstated assumption that EBMgt is a top-down process that proceeds from knowledge-generating scholars to information-processing practitioners in homogenized settings. We accomplished this by analyzing the root metaphor of a ‘bridge’ used to describe the research-to-practice gap. Within this analysis, we elaborated on the epistemological, ontological and methodological assumptions that differentiate the ‘two sides’ of the bridge—research and practice—by calling on Aristotle’s intellectual virtues of episteme and techne. Finally, in the Implications section below, we will introduce Aristotle’s third intellectual virtue of phronesis as an alternative frame of reasoning in the practice world.
Table 1: Alvesson & Sandberg’s (2011) Typology of Problematization

<table>
<thead>
<tr>
<th>ALVESSON &amp; SANDBERG (2011)</th>
<th>APPLICATION TO EBMGT</th>
<th>MIXED-METHOD PHASE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category</strong></td>
<td><strong>Type</strong></td>
<td></td>
</tr>
<tr>
<td>Gap Spotting</td>
<td>Overlooked Areas</td>
<td>Shared Decision Making Groups Conflict Commitment to Decision (Action) Study #1, #2 &amp; #3</td>
</tr>
<tr>
<td>New Moderator</td>
<td></td>
<td>Conflicting Logics of Action Study #2</td>
</tr>
<tr>
<td>New Mediators</td>
<td>Collaborative Search &amp; Analysis Cognitive &amp; Affective Conflict Study #2 &amp; #3 Study #3</td>
<td></td>
</tr>
<tr>
<td><strong>Category</strong></td>
<td><strong>Assumption</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>Problematization</td>
<td>In-House</td>
<td>Debates between researchers in a specific area Research-to-Practice Gap Top-Down Model Decision Leads to Action Theory Development Research Design Research Questions</td>
</tr>
<tr>
<td>Root Metaphor</td>
<td>Images created for understanding Bridge Theory Development</td>
<td></td>
</tr>
<tr>
<td>Paradigmatic</td>
<td>Ontology Epistemology Methodology Episteme, Techne, Phronesis Flat World of Practice Study #2 &amp; #3</td>
<td></td>
</tr>
<tr>
<td>Ideology</td>
<td>Political Moral or Gender NA</td>
<td></td>
</tr>
<tr>
<td>Field</td>
<td>Shared across theoretical schools Micro-focus of Practice Lens within organizational studies Research Design</td>
<td></td>
</tr>
</tbody>
</table>

Against this backdrop we engage a practice lens to shape our research design with a focus on the role of organizational actors (Gherardi, 2012; Jarzabkowski, 2005; Johnson, et al, 2005; Nicolini, 2012; Schatzki et al, 2001). This approach is consistent with calls in the literature for a micro-focus as an alternative to the institutional theory lens employed in much of management literature (Armenakis & Bedeian, 1999; Barley & Tolbert, 1997; Hirsch & Lounsbury, 1997; Lawrence & Suddaby, 2009; Laounsbury & Crumbly, 2007). Following a description of our mixed-methods design and phases of study, we examine implications of a potential new metaphor for EBMgt.

**A Practice Lens**

Organizational studies traditionally focus on broad patterns and structures of organizational dynamics as they are populated by the roles played and rules followed by
homo sociologicus (Dahrendorf, 1965; Nicolini, 2012; Reckwitz, 2002; Schneiberg & Clemens, 2006). The theoretical assumption is that individuals are constrained in their actions by institutional processes. However, in an influential cross-sectional study on technology adoption in hospitals (now cited nearly 2700 times), Barley (1986) concludes that structure is a dynamic force that is as much a product of social interaction as it is producer of social constraint. The dilemma of embedded agency—how actors can change institutions when their “actions, intentions, and rationality are all conditioned by the very institutions they wish to change” (Holm, 1995: 398)—brought calls for increased scholarly attention to the micro-processes of institutional change (Becker, Klein & Meyer, 2009; Greenwood & Hinings, 1996; Scott, 2001; Suddaby, 2010). More specifically, Armenakis & Bedeian (1999: 311) note that in the area of organizational behavior “the question of ‘how’ change emerges, develops, continues, and terminates over time remains largely unanswered.” Consequently, they call for more research at the micro-level on specific strategies for and outcomes of implementing organizational change.

A practice lens steps away from institutional traditions and allows us to deepen our understanding of the practice world by entering the stream of individual activity that constitutes daily life within an organization (Nicolini, 2012; Reckwitz, 2002). A practice perspective is not a theory per se but encompasses a family of theories as outlined in Table 2. This conglomeration includes the pragmatism of Peirce and Dewey; the ‘social praxeology’ of Bourdieu and Giddens; the discursive practices of Foucault; the activity theory of Vygotsky; the ethno-methodology of Garfinkel; the situated learning of Lave and Wenger; and the actor-network theory of Latour (Gherardi, 2012; Golsorkhi,
Rouleau, Seidl & Vaara, 2010; Nicolini, 2012). More than anything, a practice lens is comprised of certain common elements that include the situated, embedded and political nature of pragmatic practices that are mutually mediated by social structures, interpersonal interaction, individual activities and material objects or artifacts (Miettinen, Samra-Fredericks & Yanow, 2009; Nicolini, 2012; Reckwitz, 2002). As such, a practice lens acknowledges the influence of individual agency as well as the dynamics of “power, conflict and politics as constitutive elements of the social reality we experience” (Nicolini, 2012: 6). A practice lens also takes into account the influence of objects (such as research reports) in these social processes so it is well-suited to the study of how evidence is used in practice settings rife with politics and conflicted interests (Jarzabkowski, 2005; Nicolini, 2012).

### Table 2: Family of Theories under the Practice Lens

<table>
<thead>
<tr>
<th>Theory</th>
<th>Scholars</th>
<th>Overarching Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pragmatism</td>
<td>Pierce, Dewey</td>
<td>Theories serve as tools for thought rather than answers to problems. The value of a theory lies in its practical consequences (Johnson et al., 2007)</td>
</tr>
<tr>
<td>Social Praxeology</td>
<td>Bourdieu, Giddens</td>
<td>Social structures and an individual’s reaction to those structures determines action</td>
</tr>
<tr>
<td>Discursive Practices</td>
<td>Foucault</td>
<td>Dominant social views are established and maintained through use of power</td>
</tr>
<tr>
<td>Activity Theory</td>
<td>Vygotsky</td>
<td>Human activity and social structures mediate one another</td>
</tr>
<tr>
<td>Ethno-Methodology</td>
<td>Garfinkel</td>
<td>People make sense of the world, through language, interpersonal interactions and mutual interpretations</td>
</tr>
<tr>
<td>Situated Learning</td>
<td>Lave, Wenger</td>
<td>Learning is largely unintentional and embedded in activity, context and culture</td>
</tr>
<tr>
<td>Actor-Network Theory</td>
<td>Latour</td>
<td>Concrete mechanisms involving human and non-human elements influence the formation and maintenance of social structures</td>
</tr>
</tbody>
</table>

*Adapted from (Gherardi 2012; Johnson et al., 2007; Nicolini, 2012; Schatzki et al., 2001)

By examining the activities of people as they enact EBMgt within organizations, we begin to understand the role of research evidence within the complex dynamics of relationships and interests. Social dynamics of organizations, rather than evidence,
become the nexus of attention where human action and interaction are privileged over tenants of rational choice theory (Schatzki, 2001). In this light, the practice of EBMgt is not the individual cognitive feat of a solitary management figure. Rather, the act of reasoning around evidence becomes a “collective knowledgeable doing” among a group of people situated within a shared circumstance and context (Gherardi, 2012: 3). There is a strong element of interdependence wherein person, environment, and object are intertwined and reciprocally shape one another in a “continuous state of construction” (Jarzabkowski, 2005: 21). Evidence becomes a dynamic artifact rather than a prescribed conclusion. Knorr-Cetina (2001: 182) describes this quality as an “unfolding ontology” where knowledge objects can exist in partial or multiple instantiations as they are designed into practical solutions. As such, they are the building materials for constructing future states of being rather than sources of prescription for high-fidelity replication of what has worked in the past.

This view is consistent with the ever-increasing pace of change that demands organizations think on their feet and respond effectively to new challenges. In the complexity of pluralistic decision making, evidence is much more likely to fuel creation of alternatives among diverse interests rather than direct prescriptive recommendations. Consequently, evidence-in-practice unfolds as an emergent process in a political environment that can both enable and constrain the unfolding ontology.

Our research design is built on these philosophical foundations and is described in detail below. We address the following broad questions: (1) How do college professionals utilize empirical evidence to make decisions in quality improvement committees? (2) In shared decision making contexts, what is the relationship between
evidence use and meaningful organizational outcomes? (3) In shared decision making contexts, what are the factors that influence the impact of evidence use on meaningful organizational outcomes? (4) How can scholarly research best be laid over professional expertise to play a decision making role in tandem with interactive processes? The complex nature of the combined questions will require two types of data: qualitative and quantitative. Given the paucity of studies on the impact of EBMgt in practice, specifically in shared decision making contexts, we will need to collect qualitative data to discover patterns of evidence use in these groups. This information will allow us to recast our general research questions with specific variables and test our hypotheses. We begin the next section with a broad overview and depiction of our mixed-method design. Each of the three phases is then described in more detail including presentation of the research questions, model and results. Following a description of the setting and sample, we close this section by presenting the overall findings.

**RESEARCH DESIGN**

We conduct a sequential exploratory mixed-methods research design to develop an emergent theory of EBMgt in practice within a context of shared decision making. Given the developmental nature of our goal, a mixed-methods approach provides an opportunity to use the results from one method to inform the next (Johnson & Onwuegbuzie, 2004). It further allows us to counteract potential bias through triangulation utilizing complementary methods that provide the greatest strengths for each step of the research process thereby strengthening validity (Greene, Caracelli & Graham, 1989). As a result, we are able to discover converging results as well as glean greater richness and detail in our understanding (Creswell & Plano-Clark, 2007; Greene,
Caracelli & Graham, 1989; 2008). The research design encompasses three phases of inter-related study as illustrated in Figure 4.

Phase I begins with the inductive method of qualitative research to discover patterns that will inform subsequent hypotheses and instrument development; we then test through deductive methods of quantitative research in Phases Two and Three (Johnson, Onwuegbuzie, 2004; Morse, 2002). There are three points of interface: (1) at interpretation between Phases One and Two when qualitative themes will inform conceptualization of the quantitative research model and survey construction; (2) at data analysis in Phases Two and Three to corroborate findings; and, (3) at final theory development which takes into account the findings of all three research phases (Creswell, & Plano-Clark, 2011; Creswell, Plano-Clark, Gutmann & Hanson, 2008). In terms of emphasis, while the qualitative phase informs subsequent development and is thus important, we place more emphasis on the quantitative phases to test the claim that EBMgt improves organizational performance. Each of these phases is explained in greater detail below.
Figure 4: Sequential Exploratory Mixed Methods Design

**PROCEDURES**

**QUAL DATA COLLECTION**
- Purposive Sampling (N=13)
- Across 5 Institutions
- Grounded Theory
- Interviews
  - One-on-One
  - Semi-Structured Interviews

**QUAL DATA ANALYSIS**
- Axial Coding with Qualtrus Statistical Package
- Selective Coding with Qualtrus
- Constant Comparison
- Theoretical Sampling
- Reflexivity

**INTERPRETATION & HYPOTHESIS DEVELOPMENT**
- Summarize Dimensions

**DEVELOP SURVEY**
- Survey Construction (DeVellis, 2003)
- Constructs with Established Reliability
- One New Construct
- Expert Review of 31 Items
- Pretest; N=5 (Bolton, 1993)

**QUAN DATA COLLECTION**
- Purposive Sampling (N=139)
- Across 13 Institutions
- Self-Report Electronic Survey

**QUAN DATA ANALYSIS PHASE I**
- Data Screening (Hair et al., XXXX)
- Exploratory Factor Analysis
- Confirmatory Factor Analysis
- Structural Equation Modeling
- Moderation Analysis

**INTERPRETATION & NEW HYPOTHESIS DEVELOPMENT**
- Significance Testing

**QUAN DATA ANALYSIS PHASE II**
- Data Screening (Hair et al., XXXX)
- Exploratory Factor Analysis
- Confirmatory Factor Analysis
- Structural Equation Modeling
- Mediation Analysis

**INTERPRETATION**
- Significance Testing

**PRODUCTS**

**FIELDNOTES**
- Transcripts
- 34 Hours
- 699 Pages

**CODED TEXT**
- 1218 Open Codes
- 60 Axial Codes
- 6 Key Themes

**7 FINDINGS**
- 10 New Hypotheses

**31 ITEMS**
- 4 Subscales
- 2 Control Subscales
- Demographic Information

**NUMERICAL ITEM SCORES**
- Cronbach’s Alpha
- Composite Reliability
- Convergent Validity
- Discriminant Validity
- Common Method Variance
- Factor Loadings
- Factor Inter-Correlations
- Measure of Model Fit
- Direct Effects
- Interaction Effects

**4 FINDINGS**
- 12 New Hypotheses

**Cronbach’s Alpha**
- Composite Reliability
- Convergent Validity
- Discriminant Validity
- Common Method Variance
- Factor Loadings
- Factor Inter-Correlations
- Measure of Model Fit
- Direct Effects
- Indirect Effects
- Sobel Tests
- Bias-Corrected Bootstrap
- Confidence Intervals

**9 FINDINGS**
**Phase I: Qualitative Study**

*Phase One* is a qualitative inquiry based on grounded theory methods with a small theoretical sample. This phase allows us to develop a contextual understanding of the factors that determine or influence how information and research is used in shared decision making that will lead to development of a survey instrument. This phase was guided by the following research question:

*How do professionals source, evaluate, and utilize information to make decisions about quality improvement practices at their organizations/institutions?*

The emergent model is illustrated in Figure 5 below.

**Figure 5: Phase I Emergent Model**

Many of the findings reinforced those reported in literature reviews from the medical field (Estabrooks, Floyd, Scott-Findlay, O’Leary & Gushta, 2003; Innvaer, Gunn, Trommald & Axman, 2002; Meijers, Janssen, Cummings, Wallin, Estabrooks & Halfens, 2006). Most notably, research that is rigorous, relevant, and presented in user-
friendly formats is more likely to be utilized in practice. In addition, practical factors such as time demands and workloads as well as system capabilities and routines can facilitate or hamper use of EBMgt in shared decision making.

**Evolution of the Constructs and Questions**

The findings from this research phase paint a picture of stark contrast between decision making groups. First are those where work progresses in a spirit of collaboration and consensus throughout the academic year. Second are those where work is impeded by personality conflict, power struggle and collective departures from the decision making group. Within these findings are the seeds of concepts that evolve into constructs we employ in research Phases II and III. Three themes are particularly salient to understanding how scholarly research can be best laid over professional expertise within a context of shared decision making: (1) Evidence and Information; (2) Engaging with Dissenting Voices versus Personality Conflict; and, (3) Co-Inquiry as Procedural Rationality.

**Evidence & Information**

Narratives of respondents at colleges with productive decision groups are immersed in accounts of data use being integral to their decision making. They share examples of using institutional research data to support funding requests for instructional equipment, program development, and curriculum modifications. Directly connected to student learning, institutional research matches teaching modalities to student learning styles. Predictive analytics support decisions for modified course offerings and support services. In terms of empirical literature, respondents report funding requests and new program proposals commonly contain references to research literature. Conversely,
narratives of respondents with stalled progress reflect a paucity of references to data use within the decision making process. Respondents indicate most decisions are based on opinion, hypothetical student profiles and anecdotal reports rather than institutional or empirical research.

All respondents indicate use of ‘benchmarking’ and ‘best practice’ information from industry-specific professional associations and funding sources. Overall, the types of evidence and information use found are consistent with those generally found in business organizations (Leonard-Barton, 1992). Typical sources for information and evidence are listed in Table 3 and become the basis for the ‘Evidence’ construct in Phases II and III.

Table 3: Typical Sources for Information in Each Evidence Category

<table>
<thead>
<tr>
<th>Evidence Category</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmarking</td>
<td>The Completion Arch [<a href="http://completionarch.collegeboard.org/">http://completionarch.collegeboard.org/</a>]</td>
</tr>
<tr>
<td></td>
<td>State Board of Regents</td>
</tr>
<tr>
<td></td>
<td>Accreditation Commission Board Site</td>
</tr>
<tr>
<td></td>
<td>The Aspen Institute [<a href="http://www.aspeninstitute.org/policy-work/college-excellence">http://www.aspeninstitute.org/policy-work/college-excellence</a>]</td>
</tr>
<tr>
<td></td>
<td>Center for Community College Engagement [<a href="http://www.ccese.org/center/initiatives/highimpact/index.cfm">http://www.ccese.org/center/initiatives/highimpact/index.cfm</a>]</td>
</tr>
<tr>
<td></td>
<td>Community College Completion Challenge [<a href="http://www.cccompletionchallenge.org/">http://www.cccompletionchallenge.org/</a>]</td>
</tr>
<tr>
<td>Empirical Research from Peer Reviewed Journals</td>
<td>Community College Journal of Research and Practice</td>
</tr>
<tr>
<td></td>
<td>Community College Review</td>
</tr>
<tr>
<td></td>
<td>The Journal of Excellence in College Teaching</td>
</tr>
<tr>
<td></td>
<td>The Journal of Higher Education</td>
</tr>
<tr>
<td></td>
<td>Research in Higher Education</td>
</tr>
<tr>
<td></td>
<td>The Review of Higher Education</td>
</tr>
<tr>
<td>Professional Associations Or News Sources</td>
<td>American Association of Community Colleges [<a href="http://www.aacc.nche.edu/Publications/Briefs/Pages/default.aspx">http://www.aacc.nche.edu/Publications/Briefs/Pages/default.aspx</a>]</td>
</tr>
<tr>
<td></td>
<td>[<a href="http://www.aacc.nche.edu/Publications/Reports/Pages/default.aspx">http://www.aacc.nche.edu/Publications/Reports/Pages/default.aspx</a>]</td>
</tr>
<tr>
<td></td>
<td>The Chronicle of Higher Education</td>
</tr>
<tr>
<td></td>
<td>Change</td>
</tr>
<tr>
<td></td>
<td>Community College Research Center</td>
</tr>
<tr>
<td></td>
<td>[<a href="http://cerc.tc.columbia.edu/our-research.html">http://cerc.tc.columbia.edu/our-research.html</a>]</td>
</tr>
<tr>
<td>Funding Sources</td>
<td>Achieving the Dream [<a href="http://achievingthedream.org/">http://achievingthedream.org/</a>]</td>
</tr>
<tr>
<td></td>
<td>Bill &amp; Melinda Gates Foundation</td>
</tr>
<tr>
<td></td>
<td>Lumina Foundation [<a href="http://www.luminafoundation.org/">http://www.luminafoundation.org/</a>]</td>
</tr>
</tbody>
</table>
Engaging with Dissenting Voices versus Personal Conflict

Narratives of respondents at colleges with productive decision groups identify active engagement in dialogue with dissenting voices as a key factor in facilitating advancement toward goals. Stories reflect a view of conflict as a necessary and vital component to problem solving. Opposing voices are purposefully sought out and invited to present their position to the group for consideration. One respondent shares, “I listen to the negative voices because there’s wisdom in those and then I can create buy-in, sometimes with one person at a time.” Respondents convey value in the process of discourse as a way of constructing an inventive solution that incorporates the views and interests of all participants. As one respondent aptly commented, “You don’t have the answer until you really think about it together.” This finding evolves into the ‘Cognitive Conflict’ construct in Phase III of the research.

Similar accounts are conspicuously absent in stories from stalled decision groups. Instead, narratives are immersed in accounts of personality conflicts and collective departures from the decision group. Stories reflect verbal outbursts and personal attacks. Most of these narratives are infused with tones of anger and resentment. Words like “ugly”, “horrible”, “yelling”, “abuse”, and “bullying” describe experiences that leave people feeling like “damage has been done.” This finding evolves into the ‘Affective Conflict’ construct in Phase III of the research.

Co-Inquiry as Procedural Rationality

Closely tied to the use of evidence and engaging with dissenting voices, individuals in productive groups report engaging in a process of “co-inquiry”. Stories reflect efforts by a team of colleagues who undertake a collaborative search for and
analysis of research evidence to deepen collective understanding of a challenge at hand. For example, individuals at one college report tackling high failure rates in the math courses. The decision group was divided on what was necessary to address the problem. To gain more clarity on the dynamics of the problem, the group collectively constructed a question for which predictive analytics could provide some insight. Data indicated there was a greater success rate if the time period between the completion of a prerequisite course and the subsequent enrollment in the next course was limited to two years. There was even greater benefit if the time period was further reduced to a year. One respondent shared, “Although initially against it, the math department was influenced by this information and began work to develop a new policy. The data is responsible for influencing people’s thoughts on this.” Another decision group reports a similar process to examine the connection between teaching modalities and student learning.

Individuals in stalled decision groups report utilizing research evidence to advance a specific predetermined agenda. These observations are consistent with classics in management theory that propose information is often not used for instrumental purposes related to solving a relatively straight-forward technical problem as proposed in the EBMgt literature. Rather, information can be used politically for asserting authoritative direction and control toward a pre-determined solution (Beyer & Trice, 1982; Weiss, 1979). Likewise, Mintzberg, Raisinghani and Theoret (1976) find when decision groups mobilize information in the service of decision making it is primarily to justify decisions already made. In these contexts, decision making groups can become battle grounds for ‘dueling with data’ where each interest arrives at the table equipped with their research to support their predetermined position (Baker, Ginsburg & Langley,
2010). Precepts of social psychology suggest this dynamic could serve to solidify and further polarize initially divergent positions (Staw, 1976). As a result, common points of alignment crucial for effective shared decision making can be lost. Hence in these scenarios, there is a realistic concern that EBMgt could potentially do more harm than good.

Conversely, the collaborative search for and analysis of evidence appears to provide a vehicle for engagement with dissenting voices in a decision making group much like the techniques of dialectical inquiry or devil’s advocacy (Schweiger, Sandberg & Ragan, 1986; Schwenk, 1990). As such, it holds potential for introducing productive conflict into the decision making process. Engaging diverse thoughts and opinions related to the decision at hand is generally viewed as a constructive element in the decision making process (Schwenk & Valacich, 1994). The artifact of evidence can serve as a cooperative and deliberate shared focus of attention which is crucial for moving the process forward when there is an absence of consensus (Star, 2010). While EBMgt focuses on the substantive rationality of a decision, these observations point to the importance of procedures by which a group decision is made even when that decision is based in evidence.

Procedural rationality, as originally introduced by Simon (1978: 9), refers to “the effectiveness, in light of human cognitive power and limitations, of the procedures used to choose actions.” In other words, complete and comprehensive search and analysis of any human problem falls outside the bounds of human capabilities. This condition of ‘bounded rationality’ causes humans to accept decisions that satisfy immediate needs and conditions yet are based on incomplete information (Simon, 1978).
Other conceptualizations of procedural rationality describe the “presence of deliberation in the process of choice” whereby “the choice conditions are the subject of a search process” (Chaserant, 2003: 166). Within this deliberation, dialogue of discovery becomes of vital importance (Chaserant, 2003). Transparent and egalitarian opportunities for voice are vital as are efforts to integrate and adapt divergent findings to fit the current context of relationships and resources within the organization (Walter, Lechner & Kellermanns, 2008). Some expand the concept even further to include the interaction of prior knowledge, expert information and contextual observations (Bazerman & Neale, 1983; Langely, Mintzberg, Pitcher, Posada & Macary, 1995). As such, the concept has potential to capture one of the defining features of EBMgt—integrating professional expertise and judgment with the use of research evidence (Rousseau, 2012)—and place it in the context of shared organizational decision making.

For quantitative Phases II and III of the research, we adopt a more limited view of procedural rationality that is consistent with the finding of co-inquiry emergent in the qualitative study. We focus on the connection to evidence by adopting Dean and Sharfman’s (1996) definition involving the extent to which the decision process involves the search and analysis of accurate information. As such, our ‘Procedural Rationality’ and ‘Evidence’ constructs are complimentary in their operationalization. Our ‘Procedural Rationality’ construct captures efforts to search for and analyze information while our ‘Evidence’ construct captures specific types of information utilized in the decision process.

In addition, a rich foundation for the second phase of our mixed-method research program was provided by (1) our emergent findings; (2) findings of others subsequently...
published in the literature; and, (3) discerning feedback from a group of astute scholars.

Apart from theoretical discussions and limited field reports, there had been no systematic empirical inquiry into how EBMgt influenced committed action to a decision or the willingness to diffuse the routine in other decision making venues, particularly where politics, power and conflict were a major factor. Three research questions emerged for Phase Two:

1. Can the practice routines of EBMgt create the commitment necessary to carry decisions through to implementation?

2. Can the performed routines of EBMgt inspire individuals to re-enact them in subsequent decision groups so as to advance EBMgt throughout the organization?

3. Can the presence of competing interests change these relationships?

**Survey Development**

The survey instrument was developed in accordance with procedures outlined by DeVellis (2003). All but one variable is operationalized with relatively well-established constructs utilizing reliable measures where available. Questions were adjusted to reflect the nature of the context under study. Items for the ‘Evidence’ construct are developed specifically for the quantitative phase based on findings from the qualitative study. The pool of 31 items is subjected to review for completeness by four individuals selected for their knowledge of the academic system or practical professional experience with regard to the concepts under study.

A pretest on the adapted instrument is then conducted according to established guidelines (Bolton, 1993) for five target respondents selected based on their employment within the community college system and their involvement in the change process under
study. Issues with comprehension, contextual references, changes in narrative form, and repetitive material are adjusted. A more extensive pilot was ruled out as it could potentially erode the eventual size of the targeted sample.

**Phase II: Quantitative Study I with Moderating Condition**

We conduct a cross-sectional quantitative study with an expanded sample to elaborate, enhance, and clarify the prior findings to better understand the *conditions* under which EBMgt promotes organizational performance (Greene, Caracelli & Graham, 1989; Van de Ven, 2007). Specifically, we are interested in conditions characterized by high or low levels of conflict and how this differentially impacts outcomes emerging from the process. Employing a *moderation* model depicted in Figure 6, we use structural equation modeling to test the impact of research evidence and procedural rationality (*the collaborative search for and analysis of evidence*) on outcome measures that relate to organizational effectiveness. In particular, we are interested in understanding the interaction of evidence-based decision processes and organizational conflict on two factors thought to support institutional reform: commitment and willingness to voluntarily re-create practices in subsequent shared decision making forums.

The model is analyzed through exploratory and confirmatory factor analysis as well as structural equation modeling with AMOS that allows for simultaneous analysis of the complex hypothesized relationships (Byrne, 2010). Our results show that in organizations where conflict was high, the use of evidence in shared decision making groups actually erodes the commitment necessary for decision implementation. However, we also discovered that routines of joint inquiry involving collaborative search for and
analysis of evidence are effective in bolstering commitment necessary for effective action.

**Figure 6: Phase II Final Model**

**Phase III: Quantitative Study II with Mediating Factors**

The third study in the series presented an alternate model. Rather than considering the presence or absence of conflict as a constant that differentially impacted outcomes when EBMgt was also present, we returned to the emergent model from Phase I and speculated that conflict could act as a driver impacting the way EBMgt processes are instituted. We also differentiated between three types of conflict: cognitive and affective conflict within the shared decision making group as well as contending logics of action within the organization that precipitated polarized role identities in group members. Employing a mediation model (Figure 7), we used structural equation
modeling to analyze constructs linked in a serial fashion (Hayes, 2013). Our general research questions included:

1. Can perceived conflicting logics of action within an institution drive the implementation of EBMgt routines (evidence use and procedural rationality) in shared decision making groups?

2. Can perceived conflicting logics of action within an institution drive affective conflict within shared decision making?

3. Can the routines of EBMgt, including presentation of evidence and the collaborative search for and analysis of evidence, drive cognitive conflict within shared decision making?

4. Can the routines of EBMgt and perceived conflict within the shared decision making process influence the commitment necessary for effective decision implementation and willingness to recreate EBMgt routines in subsequent shared decision making groups?

Our results show that high levels of intra-organizational conflict led to decreased use of EBMgt decision processes as well as increased levels of anger and resentment characteristic of affective conflict. In turn, affective conflict fueled introduction of evidence into the process and damaged the commitment necessary for decision implementation. Indirect effects demonstrated that even though high levels of organizational conflict decreased the use of EBMgt processes, when groups did use the collaborative search and analysis routine it strengthened individual commitment to the decision as well as willingness to introduce the routine into subsequent shared decision making groups in the organization. A chi-square difference test between the final models of Phase II and III was very nearly significant and suggests that the Phase III Final Model, is a better fit for the data (Chi-Square = 142.789, df = 117, \( p = 0.0527 \)). We believe this provides additional support for the importance of including elements of interpersonal communication in future models of EBMgt.
The Setting

The study setting capitalizes on an opportunity provided by the introduction of a new accreditation process into the U.S. community college system as a way of supporting educational reform. While this academic quality improvement process is not described by the accrediting body as an evidence-based approach per se, it does incorporate the characteristics of “evidence-informed” practices (CHSRF, 2005; Davies, Nutley & Smith, 2000; Nutley et al., 2007). In addition, the collaborative decision process of the academic governance system is characteristic of institutionalized pluralistic organizations that are distinct in their mix of professional autonomy and diffuse authority (Jarzabkowski & Seidl, 2008; Mintzberg, 1980). These committees are involved in making key decisions about the strategies that accomplish major accreditation goals. In particular, the charge of each committee in the study focuses on “the design, deployment, and effectiveness of teaching-learning processes (and on the processes required to support them) that underlie
the institution’s credit and non-credit programs and courses.” The types of decisions made are consistent with strategic management in organizations characterized by “large, expensive and precedent setting [choices] producing ambiguity about how to find a solution and uncertainty in the decision’s outcomes” (Nutt & Wilson, 2010: 4; Mintzberg et al, 1976; Morris, Greenwood & Fairclough, 2010).

EBMgt appears to be also an easy ‘fit’ with our population (Ansari, Fiss, Zajac, 2010). Uncharacteristic of settings studied thus far, our setting is rich with elements identified in the literature to facilitate adoption of EBMgt and absent many of the identified barriers (Booth, 2011). The committees comprise of highly educated individuals who have chosen to work in the knowledge-intensive field of higher education where critical inquiry around ‘fact’ and the ‘nature of knowing’ are part and parcel of their daily routines (Dill, 1982). They are skilled in essential EBMgt skills frequently absent in other study samples. These skills include seeking, evaluating and using various types of information, including empirical research. Likewise, unlike many of the organizations studied in the EBMgt literature, colleges in our sample have open access to academic research databases and utilize varying levels of institutional research capabilities. All these elements have been shown to be correlated with utilizing evidence in decision-making practice (Buss & Shillabeer, 2011; McWilliam, Kothari, Kloseck, Ward-Griffin & Forbes, 2008). As such, this setting presents intriguing possibilities for examining the practice of EBMgt in a relatively ideal setting thereby allowing some of the more complex elements to stand out (Goldkuhl, 2011) and providing the potential to expand the scope of theory.

4 https://www.ncahlc.org/Pathways/aqip-categories.html
In terms of institutionalized conflict, divisions between faculty and administration within higher education appear are the norm. While academia values “intellectual creativity”, “reasoned inquiry” and “tolerance of diverse ideas and experiences” (Axelrod, 2002: 34-5, 37), numerous authors have observed that these same values do not extend into the management of these institutions (Kezar, 2004; Lee, 1991; Mortimer & O’Brien-Sathre, 2007; Ruben, 2004). In addition to differences in roles and reward structures (Del Favero, 2003), numerous polarities characterize the faculty-administration divide which have received commentary covering academic versus administrative (Conway, 1998), mission-centered versus market-smart (Zemsky, Wegner, & Massey, 2005), autonomy versus authority (Awbrey, 2007), and collegial versus bureaucratic (Swenk, 1999) distinctions, respectively. Del Favero & Bray (2005: 67, 54) conclude in their review, “A permanent state of tension and conflict mark these relationships” and “represent at best an uncomfortable alliance.” As such, these entrenched differences provide a context thick with competing logics of action and hold the potential to instantiate the “jointly extreme observations crucial for detecting interactions” (McClelland & Judd, 1993: 382; Cohen et al., 2003).

The Sample

A purposive sampling strategy allows us to focus on the experiences of individuals who have recently participated in a shared decision making group where elements of EBMgt were utilized (Teddlie & Yu, 2007). Our research questions lie at the heart of their experiences. While the setting is one of convenience capitalizing on a new accreditation process in a public institution, the mix of professionals in the decision groups also meets criteria for typical case sampling and increases generalizability of our
results (Teddlie & Yu, 2007). Finally, a strategy of maximum variation is used in
construction of the quantitative data set to boost analytic power required for interaction
testing (Collins, 2010; Teddlie & Yu, 2007). The qualitative sample consists of 14 staff,
11 faculty, and 6 administrators from five of the six largest community colleges in a mid-
western state. Thirty-four hours of recorded interviews yielded 699 transcripted pages
for analysis. The quantitative sample consists of 139 faculty, staff and administrators in
ratios essentially equivalent to the academic quality improvement committees in 13
public community colleges in a mid-western state.

OVERALL FINDINGS

We now arrive at the point at which we started—the guiding questions behind the
study. Overall, our findings indicate that EBMgt can, most certainly, be a viable
approach to shared decision making in circumstances where conflict is present. More
specifically, EBMgt can be used in these situations to increase commitment to decision as
well as willingness to recreate the practice of EBMgt in subsequent shared decision
making groups within the organization. Hence, EBMgt clearly has value for building
organizational capacity for both effective action and adaptive organizational evolution.
Primary findings summarized in Table 4 below highlight facilitative and restrictive
conditions for layering evidence and professional expertise in shared decision making
groups.

There are, however, some caveats. First, the dynamics of local context will
influence the way in which EBMgt is enacted. Our findings indicate, where conflicting
logics of action between professional groups exist, there is likely to be less evidence use,
less procedural rationality (and more affective conflict) despite regulatory mandates from
accrediting bodies for an evidence-based approach to shared decision making. This finding helps to fill a gap identified by Detert and colleagues (2000) for understanding the impact of organizational ecology on the implementation of EBMgt.

Second, both procedural rationality and affective conflict appear to be catalysts for increased evidence use in these scenarios, one by design and one by defense. However, in the absence of procedural rationality, introduction of evidence to shared decision making in these scenarios holds great potential for harm. Our findings indicate that the affective conflict that drives use of evidence also damages commitment to decision. Decisions that emerge from the group are likely to be accompanied by passive compliance or active undermining that can scuttle implementation. As such, this study lends credence to the warning advanced by Potworowski & Green (2012) that EBMgt may engender unanticipated negative effects in certain contexts.

Last, procedural rationality appears to be a pivotal routine to the practice of EBMgt in these settings. The collaborative search for and analysis of evidence spurs more evidence use, increased occurrence of productive cognitive conflict, stronger commitment to the eventual decision and enhanced willingness to recreate EBMgt practices in subsequent decision making groups throughout the organization. The strong positive relationship between procedural rationality and commitment along with its countervailing force to the damaging impact of affective conflict lends support to the importance of incorporating the complex dynamics of relationships and interests into future EBMgt models.
Table 4: Primary Findings

<table>
<thead>
<tr>
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<th>FINDINGS</th>
<th>RESEARCH PHASE</th>
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<tbody>
<tr>
<td>1</td>
<td>An openly accessible, convenient, fast data system facilitates evidence use in shared decision making groups.</td>
<td>I</td>
</tr>
<tr>
<td>2</td>
<td>Research that is rigorous, relevant and presented in user-friendly formats that includes a one-page non-academic summary with specific recommendations is more likely to be utilized in practice.</td>
<td>I</td>
</tr>
<tr>
<td>3</td>
<td>Reliance on internal and external data rather than anecdotal information and opinions supports productive progress in shared decision making groups.</td>
<td>I</td>
</tr>
<tr>
<td>4</td>
<td>Honoring relationships and building consensus rather than relying on organizational structures and hierarchical authority support productive progress in shared decision making groups.</td>
<td>I</td>
</tr>
<tr>
<td>5</td>
<td>Time demands and workloads as well as system capabilities and routines are salient in implementing use of evidence in shared decision making groups.</td>
<td>I</td>
</tr>
<tr>
<td>6</td>
<td>Engagement in active dialogue with dissenting voices supports productive progress in shared decision making groups.</td>
<td>I, II &amp; III</td>
</tr>
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<td>7</td>
<td>In organizations where perceived conflict is high, the use of evidence in shared decision erodes commitment necessary for decision implementation.</td>
<td>II &amp; III</td>
</tr>
<tr>
<td>8</td>
<td>The collaborative search for and analysis of evidence in shared decision making groups is effective in bolstering commitment necessary for effective action.</td>
<td>II &amp; III</td>
</tr>
<tr>
<td>9</td>
<td>High levels of perceived intra-organizational conflict decreases use of EBMgt in shared decision making.</td>
<td>III</td>
</tr>
<tr>
<td>10</td>
<td>High levels of perceived intra-organizational conflict increases levels of affective conflict between members of a shared decision making group.</td>
<td>III</td>
</tr>
<tr>
<td>11</td>
<td>Affective conflict between members of a shared decision making group increases use of evidence in the decision making process but also damages commitment necessary for decision implementation.</td>
<td>III</td>
</tr>
<tr>
<td>12</td>
<td>High levels of perceived intra-organizational decreases the use of EBMgt processes, but when shared decision making groups engaged in collaborative search and analysis of evidence, individual commitment to the decision increases as does willingness to introduce these processes into subsequent shared decision making groups within the organization.</td>
<td>III</td>
</tr>
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**IMPLICATIONS FOR THEORY AND PRACTICE**

This thesis demonstrates the possibility of expanded horizons for EBMgt. First, EBMgt can reach beyond the instrumental use of converging research findings to solve relatively straight-forward technical problems. We suggest that EBMgt also has value for shared decision making contexts within decentralized authority structures. In these circumstances, value arises from the commitment engendered in conversations around the evidence. The evidence serves as a boundary-object that frames issues and possibilities.
within a specific context. The collaborative search for and analysis of empirical evidence through a process of joint inquiry known as procedural rationality, can infuse a decision with the commitment necessary for effective implementation.

Second, EBMgt can reach beyond high fidelity replication of what has proven successful in the past. The “frantically accelerating pace of change” in the world today demands a management approach that can think on its feet and reflexively evolve with the pace and flow of constant adaptation (Hamel, 2007: 42; Gleick, 2000). Perhaps we need to pay attention to the enactment of evidence more as a journey than a destination lest we be left in the churning slip stream behind the velocity of our knowledge economy. In the muddled world of organizational management, perhaps the value of evidence lies not in its status as a disembodied force of reason but in its capacity to serve as a lever that can trebuchet us into the thrust. This approach would call for design of EBMgt practices that engender the use of evidence toward creation of innovations that can evolve within the complexity of relationships and context. A model such as this would be as much about the human elements of communicative action within social interaction as it is about the technical elements of rational action that govern the production, dissemination and direct application of research.

In the next section we present such a model that represents the culmination of our research. We begin with a discussion of metaphors as tools for simplifying complex concepts. Following presentation of a metaphor for three-dimensional thinking, we suggest the current EBMgt analogy of a bridge for spanning the gap between research and practice may have outlived its usefulness. We then develop a circular model and
metaphor for respecting and leveraging the unique wisdom of the research and practice worlds to advance the effectiveness of both.

A New Vision

Metaphors provide a language for thinking about and understanding complex phenomenon (Davenport & Prusak, 1998). Layers of meaning and visual imagery often present in metaphors can clarify underlying assumptions in ways that are otherwise difficult with abstract concepts (Smircich, 1983). However, metaphors can also create a self-fulfilling prophesy by limiting our imagination with a pre-determined landscape that becomes ‘truth’ rather than a tool of thought (Morgan, 2006). It becomes a lens, of sorts, through which we filter our experiences and expectations. Consequently, rather than serving as a “springboard for new insight”, it can become an impediment on the screen of our mind (Morgan, 2006: 342). Sometimes, introducing a new metaphor is needed to enliven deeper discernment (Morgan, 2006). We utilize the imagery from a classic old film to assist in this process.

The Creature from the Black Lagoon, mentioned briefly in the literature review above, depicts a group of scientists on an expedition who come across a mysterious creature and try to capture it without success. The movie was filmed in black-and-white stereographic 3D and projected through a linear polarization scheme. The experience of three-dimensions on a flat screen was achieved by superimposing two images, through polarizing filters, onto one screen. The viewer experienced the extra dimension by wearing eyeglasses with filters that differentially block certain light waves so each eye sees a slightly different image. This process is orthogonal in that the two poles of light travel in perpendicular directions and is often illustrated with images of ropes and fence
slats as seen in Figure 8. Without special glasses the extra dimension cannot be discovered as the separation of images is lost. Even with the glasses, given the linear nature of the technology, a tilt of the head sidewise allows both polarized images to reach the eye, thereby collapsing the third dimension and foiling the illusion. There is also a form of circular polarization that does not require the viewer’s head to be aligned with the screen. Images are still constructed on an orthogonal basis, but they travel in clockwise and counter-clockwise motion preserving independent images to each eye. Newer technologies are capable of producing 3D images without special glasses through use of a ‘parallax barrier’ on the screen. Thus, capitalizing on the physics of location and the angle of observation, a series of precision slits on the barrier allow the right eye to see a different set of pixels than the left eye creating the illusion of a third dimension. That is to say, things look different depending on where you stand.

Figure 8: Linear Polarization Scheme

Leveraging Intellectual Virtues in a Loosely Coupled World

So what does all this talk of light and illusion have to do with the research-practice gap and EBMgt? Orthogonal processes exist in most every discipline with different shades of meaning. In statistics, variables are orthogonal if they fall at right angles to one another. In other words, they go their own way. In art, it’s all about
perspective. The imaginary lines that guide your eyes to the vanishing point are orthogonal lines; they never meet. In computer science, back-up processes are orthogonal when they share no resemblance to the primary system; in essence, there is encapsulated redundancy. Each serves the goals of effective and efficient operation but they do so in distinctly different ways.

In the management field, distinct differences between the worlds or research and practice appear orthogonal in nature (Bartunek & Rynes, 2014). A number of existing dualities pit rigor against relevance, rationalism against pragmatism, and theory against practice in mutually exclusive ways. From this perspective, it seems the worlds of research and practice go their own ways and will never meet. As such, the bridge analogy makes a fitting image for a mode of conveyance between two unreachable positions where EBMgt can be advanced as a stereoscopic solution that can serve both poles. That is, we can superimpose research onto practice through knowledge transfer or engaged scholarship to create a three-dimensional truth. However, as with all linear polarization schemes, one tilt of the head brought about by the complex realities of the practice world and the illusion is lost. In addition, this approach essentially attempts to capture the ‘practice beast’ within the nets of scholarship by privileging the scientific view.

Doctoral programs for practitioner-scholars built on a more circular polarization scheme suggest another way around. Practitioners with distinct forms of professional knowledge gleaned from experience-in-practice cross over the bridge to the ‘other side’ to become scholars and then return to the world of practice with a more enlightened view of research (Aram & Salipante, 2003; Salipante & Aram, 2003; Salipante & Kowal-
Smith, 2012). These approaches honor both poles while capitalizing on a parallax of altered epistemological and ontological viewpoints that builds in an additional dimension to inquiry and insight. Consequently, professionals who emerge from these experiences are not unlike the ‘gill-man’ in The Creature from the Black Lagoon who is an amphibious-human. These professionals are able to successfully negotiate elements of both worlds—the solid rational ground of scholarship and the fluid phenomenological sea of practice. As such, they may be uniquely qualified to produce and utilize research in ways that are both rigorous in method, relevant in practice, and balanced in their weighting. However, the time horizons for this option are long and yield only a small number of multi-dexterous professionals, relatively speaking.

The main challenge with the bridge metaphor is its stasis. That is, “a bridge is an immovable structure connecting two stationary points” (Brown, 1993: 14). Yet neither world of research nor practice is static in nature; both evolve in a dynamic manner according to their epistemological and ontological principles. Like other bridges, it was built to “withstand, overcome, and exploit the forces to which it would be subjected” (Brown, 1993: 14). In the case of the research-to-practice gap, the bridge was presumably built by scholars to withstand, overcome and exploit forces found in the practice world. Yet, there is nothing in the encapsulated redundancy of the system that justifies privileging one side of the bridge over the other. They both serve the field of organizational management; their processes are merely orthogonal in nature. Unfortunately, as Thompson (1967: 10) observed, “Our culture does not contain concepts for simultaneously thinking about rationality and indeterminateness.” We are
consequently forced into a tightly coupled either/or proposition—either research or practice—and the static gap is perpetually reinforced.

There is, however, another alternative (See Figure 9). Research and practice both serve the goals of effective and efficient organizational performance but they do so in distinctly different ways.

**Figure 9: A Practice-Based Perspective of EBMgt**

While they both utilize inductive, deductive and abductive thought processes, they are distinct in that these skills are deployed in very different terrains—the determinant world of scientific process and the indeterminate world of practice. This distinctiveness, in combination with established points of interface (engaged scholarship, practitioner-scholars and EBMgt), create a loosely coupled system (Weick, 1976). From this perspective, the immovable stasis found in the bridge metaphor is no longer suitable. Instead, we can focus on an image that captures the dynamic movement of both worlds.
while recognizing points of alignment that change over time. A compound gear, as depicted in Figure 9, becomes more apropos in that it captures circular movement that can leverage the two mirror-imaged worlds of research and practice—both worlds can function separate and apart according to their epistemological ethos while co-existing in ways that can capitalize on their unique identities. To more fully understand the dynamics of using ‘evidence-in-practice’ on the practitioner-side of the equation, we must consider two more concepts: learning and phronesis.

**Evidence-in-Practice**

EBMgt is described in the literature as a decision-making tool, but its true essence is found in learning—learning about what works and what doesn’t in the quest for organizational success. That is, scholars engage in empirical inquiry to learn about organizations from a scientific perspective—Aristotle’s *episteme*. Research findings are subsequently disseminated to executives who thus learn about proven strategies and methods to solve organizational problems (Rousseau, 2006). Scholars also consult with practitioners to learn from the technical knowledge and concrete skills necessary in context-dependent situations—Aristotle’s *techne*. However, according to current conceptualizations of EBMgt, learning apparently stops here. At this point, the practitioner’s role is to passively absorb the research findings and implement them within the organization. Yet we know there is much learning that takes place on the practitioner-side of the equation, as observed by Argyris & Schon (1996: xvii):

“[Organizations of all kinds] need to adapt to changing environments, draw lessons from past successes and failures, detect and correct the errors of the past, anticipate and respond to impending threats, conduct experiments, engage in continuing innovation, and build and realize images of a desirable future.”

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We also know this approach to learning represents only the more basic levels of learning. Bloom’s Taxonomy of Learning, one of the most widely used educational classification systems in the world\(^5\), places ‘knowing’, ‘comprehending’ and ‘applying’ knowledge at the base of the learning pyramid (Bloom, 1956; Krathwohl, 2002). Description of fact, grasping meaning and utilizing knowledge in context to solve a problem represent a foundation on which to build. These are also the basic skills required for EBMgt practitioners.

Next in the taxonomy are the skills of ‘analysis’, ‘synthesis’, ‘evaluation’ and ‘creation’ that describe advanced levels of learning. The ability to deconstruct a concept into component parts, recombine elements into new ideas, judge according to an established criteria, and design or invent effective solutions to problems are all indicators of an excellent learning experience. However, these advanced levels of learning are absent in scholarly depictions of EBMgt for practitioners. There are no recommendations for differentiating constituent parts of research studies, recombining findings from various studies into new ideas, making practical judgments about organizational fit based on established criteria, or generating a novel solutions. Implicit in their absence is the message that these are not necessary skills for EBMgt on the practitioner-side of the bridge. Practitioners need only passively absorb and apply the technical solutions reported in systematic reviews. However, emerging studies discussed above suggest more is needed.

We propose these skills are indeed most necessary for EBMgt in practice. These advanced levels of learning mirror the process of inquiry conducted on the scholarly side

\(^5\) http://edglossary.org/blooms-taxonomy/
of the bridge from a different point on the parallax. As such, it provides an additional
dimension to the flat world of practice that goes beyond simply including input from
experts, stakeholders, and the local context in decision making (Reckwitz, 2002).

‘Evidence-in-practice’ engages the third element in Aristotle’s tripartite view of
intellectual virtue—phronesis. While episteme values scientific knowledge and techne
values technical skills in practice, phronesis values expertise-in-action. Entomological
roots for the concept are found in Aristotle’s Greek where it is translated as ‘prudence’
(Aristotle translated by Irwin, 1999) or “wisdom in determining ends and the means of
attaining them”6 and suggests judicious use of resources.

Three qualities of phronesis are particularly salient for consideration of an
‘evidence-in-practice’ perspective. Consistent with Cohen’s (1979) call for utilizing
research in tandem with interactive processes, the main objective of phronesis is to
“produce input for ongoing social dialogue and praxis rather than definitive, empirically
verifiable knowledge” while keeping “rigorous empirical study and verification of data”
central to the process (Flyvbjerg, 2001: 115). Consistent with organizational need for
effective action and adaptive evolution (Drucker, 1955; Rousseau, 2012), phronesis is the
“ability to grasp the essence of a situation in process and take the action necessary to
create change” (Nonaka, Toyama & Hirata, 2008). Consistent with Trank’s call for
consideration of context and ethics, it requires “the ability to determine and undertake the
best action in a specific situation to serve the common good” (Nonaka, Toyama & Hirata,
2008: 14; Flyvbjerg, 2001). As such, it contains knowledge of data, ethics and social
connections as well as political judgment needed for expertise-in-action.

6 http://dictionary.reference.com/browse/phronesis
More specifically, Nonaka, Toyama and Hirata (2008: 55) identify the abilities that constitute phronesis:

1. “To judge goodness—to conceive of an ideal and pursue its realization;
2. To create shared contexts in motion;
3. To see the micro and macro simultaneously;
4. To reconstruct the particulars into universals and vice versa using vertical methods of deductive and inductive reasoning \(\text{as well as}\) horizontal methods of expression such as metaphor, analogy and narrative;
5. To utilize political power for the common good using inclusive strategies (both/and thinking) rather than mutually exclusive categories (either/or thinking).”

Reflected herein is an aggregate mode of seasoned professional thought that includes inductive, deductive and abductive reasoning (Chia, 2002; Schon, 1983) to address the challenge of integrating substantive, practical, and political rationality in EBMgt (Bartlett, 2011; Hodgkinson, 2012; Learmonth & Harding, 2006). ‘Knowledge’ from this perspective goes beyond applying rules, learning through informed trial-and-error, or slow analytical thinking (Flyvbjerg, 2001; Kahneman, 2013). Similarly, Van de Ven (2007: 286) suggests an integrative strategy of ‘arbitrage’ that acknowledges the interdependencies and webs of entanglements between different and divergent dimensions of a problem, its boundaries, and context.” In the end, phronesis is the “ability to initiate action toward the future, based on a universal consensus about specific goals and measures reached through the shared judgment and conviction of individuals in each context” (Beiner, 1983 as quoted in Nonaka et al., 2008: 54). As such, phronesis is quite consistent with broader views of procedural rationality that embrace discovery, deliberation, divergent findings, and expertise embedded in specific contexts (Bazerman...

In summary, our model and metaphor suggests the answer to the research-to-practice gap lies in the respectful coexistence of these two mirrored realms where evidence-in-scholarship and evidence-in-practice represent distinctly different, but equally valid, perspectives. Scholars can seek out practitioner perceptions in the form of engaged scholarship where epistemic values still privilege science over practice in a positivist world. Practitioners can seek out scholarly perceptions in the form of empirical findings from systematic reviews where phronetic values still privilege practice over science in an emergent world. Were this to be the case, it would add an entirely new dimension to the EBMgt literature—an epistemology of practice.

LIMITATIONS

The thoughtful construction of any research endeavor by its very nature limits the generalizability of the findings in some fashion. The present thesis is no exception. With regard to the research model, three points warrant comment. First, we neither controlled for leadership styles nor decision framing in the model. While the importance of these variables is established in the literature (Kray & Galinsky, 2003; Vroom & Yetton, 1973), the complex nature of these factors within groups and between institutions in the sample made conceptualization and measurement equally complex. Further, given the prospect of a potentially limited sample due to the specificity of the representative group we were seeking, inclusion of these additional factors was statistically risky. In the end, we opted for a conservative approach for these first steps toward empirical inquiry into impacts of EBMgt on meaningful organizational impacts.
Second, we did not control for the quality of evidence used, how it was used to influence decision, nor how it shaped the final decision. Instead, we expanded the conceptualization of evidence to that of a boundary-object that frames issues and provides a cognitive focus for dialogue between diverse interests. While this view is consistent with classics in organizational literature, it does fall outside current theories of EBMgt in academic circles. We expect this strategy to meet with mixed reviews.

Third, we made a conscious decision to delimit our re-creation of practice construct in terms of concrete tasks and behaviors. Instead, we adopted a practice perspective that acknowledges the complex and often indefinite nature of change in motion. We expect this approach to, likewise, meet with mixed reviews.

Fourth, the choice of measurement model specification is worthy of note here as well. The two exogenous constructs included could, on their surface, appear to be formative rather than reflective (Diamantopoulos & Winklhofer, 2001). These distinctions are not necessarily clear. Due to theoretical overlap in the items, they may actually tap into the same underlying processes making reflective modeling appropriate (Diamantopoulos & Siguaw, 2006). From a statistical point of view, RMSEA has been identified as the best index for detecting measurement model misspecification (MacKenzie, Podsakoff & Jarvis, 2005). The acceptable RMSEA in the both CFA and SEM models provides confidence in the validity of our findings. Finally, there are likely recursive elements involved between the elements of EBMgt practice and the two types of conflict that are beyond the scope of our first steps into this territory.

Fifth, in terms of the sample, the generally high level of educational attainment in this sample is noteworthy. While this distribution will likely be similar to that found in
professional service firms, it may be uncharacteristic of general management settings. Nevertheless, the skills set that accompanies this level of education allowed us to rule out some of the common barriers to EBMgt cited in the literature. As a result, we were able to look deeper into the interpersonal dynamics involved in this approach to decision making. Of course, having additional constructs in the model to account more directly for motives behind the introduction of evidence would have taken us further down this path.

Finally, this thesis represents an endeavor that stretches the envelope for EBMgt in terms of context, methodology, and constructs. As such, it has been met with mixed reviews from dominant voices in the EBMgt field. On the one hand, reviewers offered several positive observations. First, they heralded the sophisticated and ambitious exploration of the literature as well as the engaging writing style. Second, they applauded an interesting contribution to the scarce empirical evidence on EBMgt’s impact on meaningful organizational outcomes such as commitment. Third, they felt the setting, sample and analysis were all powerful and relevant. On the other hand, given the present paucity of empirical research in this area, there was concern that this thesis was jumping too far ahead of the field. Given the paucity of empirical work available from which to build, they suggested a more conservative and exploratory approach for the design and a far more tentative approach to drawing conclusions.

**CONTRIBUTIONS**

First, this thesis began as a rather straight-forward exploration of how higher education professionals source, evaluate, and utilize information to make decisions about quality improvement practices at their institution. The qualitative study discovered
several key findings that contribute to our understanding of information used in decision making. First, community college professionals utilize a broad source of information that includes context-specific data, professional association newsletters and publications, sector-specific and mainstream news sources as well as governmental bodies, non-profit foundations, and public opinion. Second, despite predictions in the literature to the contrary, community college professionals utilized empirical evidence that was both rigorous and relevant in decision making. The level of academic training and access to research databases seemed to facilitate this process. Consistent with observations in the medical field, empirical findings presented in user-friendly formats that included one-page non-academic summaries with specific recommendations were more likely to be incorporated into decision-making dialogues. However, arguments based on empirical evidence were generally given less credence than arguments supported with institution-specific data.

While this discovery alone is of value, it was overshadowed by other unsuspected factors with more profound implications for EMBgt. Much like Sitkin and Stickie’s (1996) study of total quality management implementation in a science lab as well as Bunderson and Thompson’s (2009) study of zookeepers, once the study was underway what emerged was an intriguing tale of passion, power, and paradox far more interesting and impactful to our problem of practice than simply introducing research evidence into decision making. What emerged was not a story about evidence, but a story of conflict where evidence became a pawn in the game. This discovery altered the focus of our research to include people, their activities, and their relationships as key factors in the
overall impact of EBMgt on organizational outcomes. The rich description of findings provides several avenues for continued exploration.

Second, this thesis offers several new angles from which to study EBMgt. This thesis represents one of the first attempts to study meaningful organizational outcomes related to the use of empirical evidence in organizational decision making, rather than facilitators and barriers of information use (Reay, Berta & Kohn, 2009). These studies also examine the use of EBMgt strategies in situations of shared decision making in pluralist organizations, rather than a single decision maker in a centralized authority structure. Introducing a practice-perspective and the dynamics of conflict in decision making highlights the need for greater understanding of the specific behaviors, decision-making processes, and organizational dynamics that lay the foundation for successful implementation of evidence-based management strategies. We hope to expand the dialogue in the EBMgt arena to include the process of inquiry among engaged professionals in practice, particularly where issues of power, politics, and conflict may play a dominant role in the interactions.

Third, our setting is uncharacteristic of those studies thus far providing the potential to expand the scope of EBMgt theory. The setting is rich with elements identified in the literature to facilitate adoption of EBMgt and absent many of the identified barriers. As such, it presents the opportunity for examining the practice of EBMgt in a relatively ideal setting thereby allowing some of the more complex elements to stand out.

Fourth, this thesis introduces procedural rationality as a new construct and mediator for EBMgt. The joint inquiry of procedural rationality facilitates active and on-
ongoing collaborative engagement between diverse constituents involved in shared decision making within a specific context and leads to commitment to decision necessary to effective action. This approach integrates professional expertise and judgment into the process of discovery and adaptation of research findings. As such, procedural rationality holds promise as an interactive process that facilitates research use by a diverse group of professionals.

Finally, this collective work represents a scholarly contribution to the field of EBMgt in the form of a mixed-method multi-site comparative study of implementation and outcomes related to the use of empirical evidence in organizational decision making. The strength of these research design characteristics place it in the upper 22% of quality studies conducted in EBMgt (Reay, Berta & Kohn, 2009). The quantitative elements also respond to the call for quantitative studies of EBMgt (Estabrooks, 2003; Reay, Berta & Kohn, 2009; Trinder, 2000).

For theorists, this approach stretches the epistemological territory of EBMgt by placing people, their activity and their relationships at the center of analysis and relegating evidence to a secondary, but no less important, role. This perspective also softens the boundaries between structure and agency, thereby offering the possibility of insight into the ways in which they mutually constitute one another. Hence, we open a window to offer EBMgt the breeze of a social theory of practice. Our results are also a reminder that there are many uses of evidence for influencing organizational behavior. Instrumentally guiding a technical decision is but one use. Evidence can also serve as a boundary-object to structure dialogue and may serve as an epistemic-object that engages the intrigue of professionals toward designing an as yet unknown solution to a specific
challenge. Finally, our results are a reminder that decision and action can be worlds apart. There is much scholarly work to be done to account for the landscape between these two points.

For practitioners, this approach holds the hope of specific and relevant recommendations for practice. Our results indicate that EBMgt may not work equally well in every organization or every decision situation. The presence of different patterns of reasoning between professional groups in an organization can hinder the implementation of EBMgt in decision making. Practitioners must be aware of the dynamics that can lead to the selective presentation and acceptance of evidence that supports a favored viewpoint, to the exclusion of valid evidence that opposes it or suggests a better alternative. Acknowledgement of affective conflict is equally important as it contributes to these dynamics and damages commitment to the eventual decision. Fortunately, this study also provides a potential remedy for these challenges. Routines for the collaborative search for and analysis of evidence can be a powerful activity to counteract these damaging influences.
Appendix A: Qualitative Research Report

THE PARADOX OF EVIDENCE-BASED MANAGEMENT IN HIGHER EDUCATION

By

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Submitted in Partial Fulfillment of the Requirements for the Qualitative Research Report in the Executive Doctor of Management Program at the Weatherhead School of Management

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December 2009
ABSTRACT

The potential role for evidence-based management approaches to transform systems of higher learning and meet the growing needs of our knowledge economy is widely proposed. Most of the empirical work on evidence-based practice and management has concentrated on dynamics directly related to the use of evidence. This study takes a broader view of the management process of inquiry in which evidence is collected, interpreted or ignored. Semi-structured interviews with 31 faculty, staff and administrative members of college quality improvement committees were conducted in a grounded approach to qualitative research. What emerged was an intriguing tale of passion, power, and paradox that suggest evidence-based management in higher education is both process and product of structurational forces within a dynamic of inquiry, particularly where issues of politics and conflict may play a dominant role in the interactions.

Key words: Evidence-based management, higher education, institutional theory, structuration, grounded theory, passion, calling, inquiry, conflict, power

INTRODUCTION

Institutions of higher learning have been challenged to respond to demands for graduates with the skills needed to maintain US global competitiveness. The fastest growing jobs in the future will require a college education (U.S. Department of Labor, 1999) and these jobs are projected to grow faster than America can produce college graduates (The Washington Post, 2009).

The U.S. Department of Education (2006: 25) has declared, “With too few exceptions, higher education has yet to address the fundamental issues of how academic programs and institutions must be transformed to serve the changing needs of a knowledge economy.” Academic reform to date has been based on “ideology, faddism, politics, and marketing” rather than evidence of success (Slavin, 2008: 5; Birnbaum, 2000; Stensaker, 2007). Based on the effectiveness of research-based practice
approaches in the fields of medicine, business management, and social work (Straus & Sackett, 1998; Aram & Salipante, 2003; Wilson & Douglas, 2007), some have suggested introducing research-based principles into the management processes of higher learning institutions as a way of increasing effectiveness and efficiency of change efforts (Levin, 2004; Slavin, 2008). However, the dynamics of college administrative structures as described in the classic, “How Colleges Work” (Birnbaum, 1988), are uniquely different from the domains of business--and many management practices from the business sector adopted by colleges have been difficult to transfer to the collegiate world of loosely coupled systems, academic autonomy and shared governance (Birnbaum, 2000).

We conducted qualitative research to discover how evidence-based management approaches common to business are understood and used by faculty, staff and administrators in U.S. community colleges to manage change. Semi-structured interviews with thirty-one members of quality improvement committees at five Midwest two-year colleges shed light on the potential role of evidence-based management approaches in transforming systems of higher learning to meet the growing demands for accessible and affordable quality education to meet the needs of our knowledge economy.

LITERATURE REVIEW

Evidence-based management is a relatively new concept in the management repertoire of organizational practice skills (Pfeffer & Sutton, 2006; Rousseau, 2006; Rousseau & McCarthy, 2007). The basic concepts have emerged from “evidence-based practice” approaches in the fields of medicine, social work, and human resources where the foundational assumption is that practice decisions will be of higher quality when they are systematically informed by scientifically proven methods (Drake & Merrens, 2005;
Rousseau, 2006; Sackett et al., 1996). The defining features of the strategy include the utilization of evidence to make decisions and integration of professional expertise with that evidence (Sacket et al., 1996). In other words, evidence and expertise are not mutually exclusive; they are unequivocally interdependent. Despite this clear distinction, research in the area of evidence-based approaches appears to have split these two defining features into separate paradigms of practice (Nutley et al., 2007). The first model focuses on the evidence while the second emphasizes professional expertise.

Having evidence as its starting point, the first paradigm promotes a narrow ‘product’ view and revolves around the question, “What works?” (Davies, et al., 2000; Reynolds, 2000). This rational-linear approach regards research that is rigorous and directly relevant to a specific area of practice as more likely to be utilized in professional decisions (Belkhodja et al., 2007; Innvaer et al., 2002). Advocates argue that basing decisions on interventions proven to be effective in numerous empirical studies will improve the quality and outcome of services and organizations (Shaxson, 2005) and recommend increasing use of evidence-based knowledge through systematic reviews and meta-analyses as well as improving the critical appraisal skills of those accessing the information (Lavis et al., 2005; Profetto-McGrath et al., 2003). Constructing guidelines and protocols for specific clinical practices based on systematic reviews of relevant double-blind randomized controlled studies (Campbell Collaboration, 2004; Cochrane Collaboration, 2009; Scott et al., 2007; Sheldon, 2005) will, it is argued, address a broader range of questions that include, “What works for whom in what circumstances, in what respects, and how?” (Pawson et al., 2005).
Critics of this “what works” approach in both medicine and management, however, see evidence-only-based approaches as “an overly simplistic and reductionist approach which fails to do justice to the inherent complexity of practice situations” (Trinder, 2000: 218) that require professional reasoning and judgment as well as human empathy and compassion (Miles, 2007; Sauerland, 1999). The second paradigm addresses these concerns by emphasizing contextual dynamics and participant relationships within the decision-making process that is as much about influencing attitudes and perceptions as it is about adopting specific practices (Nutley, et al., 2007; Trinder, 2000; Weiss, 1979). This view advances a broader ‘process’ approach to knowledge utilization, sometimes referred to as “evidence-informed” practice focusing on the questions, “Will it work for us?” and “Should we do it?” as well as expanding the definition of what counts as ‘evidence’ (Davies et al., 2000; Nutley et al., 2007). Consistent with Sackett’s (1996) original definition, evidence becomes a necessary but not sufficient element of the process that must also include comprehensive professional reasoning and judgment (Shaxson, 2005; Sweeney, 1996; Trinder, 2000). Advancement in this area focuses on developing a greater understanding of the complex dynamics involved in the decision-making and implementation processes (Rycroft-Malone, 2004; Trinder, 2000). One promising implementation strategy involves “deliberative dialogue” whereby the merits of the evidence are discussed by decision-makers in light of their own values and expertise as well as the context in which it is to be applied (Bridges & Watts, 2008; Culyer & Lomas 2006; Lomas & McCutcheon, 2006).

In short, both ‘product’ and ‘process’ paradigms provide theoretical views on what is necessary to move empirical research into practice. Both offer valid perspectives
and seem equally germane to the dialogue around evidence-based approaches. However, interestingly, the strategy of evidence-based management as an organizational management technique lacks a base of empirical evidence to clearly justify the overall efficacy of the approach (Estabrooks, 2003; Miller 1999; Trinder, 2000). Available research, while plentiful, focuses primarily on the facilitators and barriers of engagement within idiosyncratic contexts as discussed below.

Three literature reviews regarding specific facilitators and barriers of evidence-based management in the medical field identified four relevant areas of focus: elements of the information itself, characteristics of the individuals utilizing the information, features of the organizations employing evidence-based approaches, and elements of the dialogue in the decision-making process. In terms of information, relevance and rigor along with brief presentation of data positively influenced the introduction of empirical evidence into the decision making process (CORD, 2006; Innvaer et al., 2002; Shaxson, 2005). With regard to individuals, information that was consistent with established personal or professional beliefs was more likely to be accepted and utilized than information contrary to established beliefs (Atkins et al., 2005; Beyer & Trice, 1982; Howell, 2008; Oh & Rich, 1996). Finally, organizational structures and routines specifically geared to use of evidence such as resources, support, and decision-making processes as well as the social and political relationships influenced research utilization (Belkhodja et al., 2007; Levin, 2004; Meijers et al., 2006; Rycroft-Malone, 2004; Rousseau, 2006).

In terms of translating the evidence-practice model to an evidence-based management model, several distinctions are noteworthy. Evidence-based practice was
specifically designed for the medical treatment of individual patients (Sackett et al., 1996). As such, ‘evidence’ includes carefully controlled empirical study of biologically-based treatments and decisions are made at the micro level; they involve one individual. In the field of management, ‘evidence’ typically includes correlational studies within the realm of social science and decisions are made at the meso and macro levels (Rousseau, 2006); they involve groups of people and the organization as a whole in addition to how it fits within broader societal dynamics. With regard to the product versus process debate, evidence-based management may represent an opportunity to conjoin similar parallel avenues of research dating back to the differences between the time and motion studies of Frederick Taylor’s (1911) “The Principles of Scientific Management” and the relationship-building strategies of Chester Barnard’s (1938) “Functions of the Executive.”

With regard to applicability of evidence-based management approaches to higher education administration, two significant issues emerge. First, the bulk of research within this area has been conducted within the health care community where knowledge utilization strategies have been shown to be context-specific (Dopson et al., 2002; Van de Ven, 2007). Strategies that work in one health care setting may not be effective in other situations. Therefore, the applicability of these strategies across fields is uncertain and little research has been done to shed light on this issue (Walshe & Rundall, 2001). Second, there are considerable differences between the governance of health care systems and higher education institutions (Mortimer & O’Brien-Sathre, 2007) that may further limit generalization of evidence-based strategies from the medical field. However, in the
absence of a similar body of research in the higher education arena, the literature on evidence-based medicine becomes a starting point for discussion.

**METHODS**

**Methodological Approach**

The aim of the present study was to increase understanding of the social and organizational processes involved in translating evidence-based management into the context of higher education. We sought to understand the “what” and “how” of these complex interactional practices so as to generate an analytical theory in the hope of making a contribution to improving systems of higher education. This purpose was particularly well suited to qualitative research methods.

This study also sought to address a methodological gap in educational and organizational research. Educational research has been criticized for being too narrow and too sterile to be of much use in practice (Bridges & Watts, 2008; Hossler, et al., 2001; Kezar, 2000; Levin, 2004; Ramaley, 2000). Similarly, organizational research has been criticized for being too ‘positivistic’ in its approach to the complex dynamics of organizational processes (Symon, Cassell & Dickson, 2000). Finally, respected management scholars have observed that research has been too detached from public interests and concerns (Adler & Jermier, 2005; Feldman, 2005; Rynes & Shapiro, 2005).

The present study constitutes a unique effort to utilize the scholarly techniques of the qualitative method to explore complex organizational management dynamics in public higher education from a practitioner-scholar’s point of view.

Given the paucity of knowledge regarding evidence-based management practices in general, and application within the arena of higher education specifically, the grounded
theory-based approach became a valuable research tool for inductive exploration and
theory development. Grounded theory was originally developed by Glaser & Strauss
(1967) as a qualitative method that would immerse the researcher in the experiential
world of informants as a way of developing a theory that was authentically reflective of
the experience being observed. The method was later modified by Strauss & Corbin
(1990) to incorporate techniques that would strengthen the validity and reliability of the
findings. While there has been much debate about the merits of each approach, the
volume of citations within the literature would seem to indicate an increasing preference
for Strauss and Corbin’s approach that provides improved reliability through explicit
procedural structure (Parker & Roffey, 1996; Rennie, 1998). Despite this divergence,
there are three areas of agreement between these two approaches that serve to increase
the validity and rigor of the research: constant comparison, theoretical sampling and
reflexivity (Suddaby, 2006). The application of these concepts in the present study is
discussed below.

Sample

The sample consisted of 14 staff, 11 faculty, and 6 administrators from five of the
six largest community colleges in a mid-western state. Colleges were identified through
the regional accrediting organization’s web-site based on their adoption of a new
accreditation system utilizing a quality improvement model. Participation in this new
system reflected their status as an institution with an established commitment to quality
improvement practices as well as a proven track record of successes. Specific colleges
were selected based on similarity of improvement goals with regard to student learning.
A strategy of purposive sampling was initially employed to achieve representation of roles in ratios similar to that on the quality improvement committees. The Provost at each college identified individuals involved in the student learning quality improvement committees. A strategy of theoretical sampling then guided selection of individuals based on their involvement with accreditation quality improvement projects related to student learning. Specific participants were selected based on their direct experiences with sourcing, evaluating, and utilizing information in the decision-making process around institutional quality improvement. They represented diverse areas of each college that included student services, institutional research, and financial systems as well as the scholarly disciplines of math, science, nursing, engineering, and developmental education.

Data Collection

Committee member lists were obtained from the Provost (or their designee) at each college after appropriate IRB processes were completed on each campus. All individuals were contacted by e-mail with a one-hundred percent response rate. College specific documents available on the regional accreditation web-site, college web sites,
and other public education and grant web sites were reviewed prior to conducting interviews.

All face-to-face interviews were conducted at a location of the participant’s choice which was most frequently an office or conference room on their college campus. Four interviews were conducted by telephone due to last minute scheduling challenges. Elements of Informed Consent, including the right to withdraw, were reviewed with participants before each interview and signatures were obtained, including permission to digitally record the interaction.

Data was collected through semi-structured interviews, approximately sixty minutes in length. A pre-developed interview protocol was employed to provide some structure and consistency but the process was flexible so as to remain responsive and open to the experiences shared by participants. Consistent with the grounded theory principle of theoretical sampling, additional questions were added to the protocol in response to patterns that emerged in the early interviews. Active listening skills were utilized to cultivate a sense of connection with respondents (Corbin & Morse, 2003; Hall & Callery, 2001).

Digital recordings were forwarded to a professional transcription service with a proven history of reliable and proficient service that included appropriate procedures for working with material from human subject research. The accuracy of the verbatim transcripts was established prior to data analysis. Recordings and transcripts were catalogued through a numbering system and identifying information was removed from transcripts prior to analysis. Digital records and transcripts were stored in a secure location to protect the confidentiality of participants.
A total of thirty-one interviews were conducted across five colleges for a total thirty-four hours of recorded interactions yielding six-hundred ninety-nine transcribed pages.

**Data Analysis**

Data analysis was guided by the principles of the grounded theory method (Corbin & Strauss, 2008). Specific techniques included constant comparison, theoretical sampling, and reflexivity that allowed for responsive discovery of emerging concepts and theories.

**Constant comparison.** Recorded interviews and transcripts were reviewed several times to become comfortable with the respondent’s language and frames of reference. The process of open coding proceeded from initially hand coding the first interviews to moving into a computer software program (Qualrus) to assist with a liberal coding approach that mirrored participant language. This technique yielded 1218 individual open codes in the first twelve transcripts that proved unmanageable for the computer program. A process of axial coding was undertaken to discover common elements that could be sorted into meaningful categories. Codes with similar meaning or on similar topics were grouped together resulting in 90 axial codes. These were subsequently reduced to 60 axial codes that sorted themselves into varieties of data use as well as numerous dichotomies such as internal v. external, change v. stability, clarity v. uncertainty, structures v. people, movement v. inertia, voice v. silence, formal v. informal, direct v. indirect, and collaboration v. control. The remaining interviews were open-coded and any new themes or patterns that emerged were incorporated into the existing axial scheme. Core categories were then established through a strategy of
selective coding whereby central key themes were identified. These included data access, data use, and conflict resolution as well as three dichotomies that encompassed innovation v. stasis, relationship-building v. authority & control, and process v. outcome orientation. Several categories related to specific student services and institutional policies were dropped from the analysis as the present study was focused on the process of decision-making rather than the specific outcomes of decision-making.

**Theoretical sampling.** The technique of theoretical sampling was used throughout the study to follow-up on conceptual themes that emerged during the interviews. This procedure allowed the researchers to be responsive to concepts as they became apparent by engaging in additional exploration with targeted questions and literature review. As a result, we were able to develop a deeper and broader understanding of how the elements combined into a cohesive story. While we were initially interested in differences between individuals based on their roles, we began to see striking patterns emerge among individuals within the same institution. Guided by the grounded theory principle of theoretical sensitivity, we narrowed our analysis to four of the five colleges with the most dramatic differences and grouped these into two groups of two colleges based on whether the committees made significant strides or were impeded in their progress toward established goals. College 5 demonstrated characteristics of both groups and was dropped from the analysis for clarity of understanding.

**Reflexivity.** We employed an extensive “audit trail” by way of fieldnotes (Emerson, Fretz & Shaw, 195), research memos (Parker & Roffey, 1996), and reflexive journals (Cutcliffe, 2003) composed following each day of interviews and literature
exploration. These disciplined reflections provided a chronology of the impressions that contributed to evolving thoughts about the larger picture being painted by respondents. These notes also documented the nature and rationale of decisions made during data collection and analysis to increase the dependability and confirmability of the final findings. Finally, researchers engaged in a process of peer review to elicit feedback that deepened our analyses and generated alternative interpretations.

FINDINGS

The findings presented below paint a picture of stark contrast between two sets of colleges--one where the work of the student learning quality improvement committee (QIC) progressed in a spirit of collaboration and consensus throughout the academic year and the other where work was impeded by personality conflict, power struggle and collective departures from the shared governance process. Remarkably apparent in the narratives of the respondents was a sense of passion for their work in the education field as well as a robust commitment to the mission of community colleges. This passion and commitment was noted in every interview at every college across faculty, staff, and administrators. We note it here and include representative quotes in Table 2 as it lays a portion of the groundwork for the discussion to come.
### TABLE 2
**Passion for Education & Commitment to Community College Mission**

<table>
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<tr>
<th>PRODUCTIVE COMMITTEE PROGRESS</th>
<th>STALLED COMMITTEE PROGRESS</th>
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<tr>
<td>For me, I don’t think education is just the thing that you do to get a better job. It’s the thing that opens your eyes to the giant world that is out there beyond your neighborhood…So there’s an opportunity for people to really grow personally beyond—which affects you eventually in our job, but affects you for the rest of your life.</td>
<td>I feel that many of us have that same passion for what we do. It’s about helping students learn, succeed, and be successful.</td>
</tr>
<tr>
<td>I don’t think there’s any place in higher education that has a stronger mission than community colleges. I love the work. We’re the people’s college. We bring life and vitality to communities if we exercise our mission appropriately. We’re sort of the gateway to higher education. I love the work.</td>
<td>I remember really struggling my second year of college. I found a professor I really liked and said, “I don’t think I’m smart enough to be in college.” She talked with me about how I was studying and reading. [It really helped…and I graduated with a high GPA]. I just really love working with students. I really do. I think I always gravitated towards those students who seem to be struggling for whatever reasons. I think [those students] really need advocates to speak up for them and provide the kind of services that can help them and at least have the opportunity to be as successful as everyone else.</td>
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<td>I learned a lot and I’ve gotten more passionate about working with marginalized populations, and just the whole social justice aspect of what we do. I really feel very strongly, and it always gives me chills when I say it, but I feel like this is what my life’s work is going to be about from here.</td>
<td>I think one of the most exciting things was seeing—even faculty—hearing the excitement ‘cause sometimes you only hear the negative things. And all of a sudden we had people that aren’t just involved in the union workings of things, the actual faculty that touch students’ lives. And that’s what we’re about. But to hear their excitement and their passion and what they’re doing…I saw that we are improving.</td>
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<tr>
<td>You can see that they are on fire—no matter how hard or how frustrating they have to work to get something done right. ‘I’m thinking of [a particular person]. I mean she’s on fire for her job. She will do whatever it takes to help someone…who has some stumbling blocks [that could prevent them] from being successful.</td>
<td>So the semesters I wasn’t teaching, I would go tutor because I just love students, and I love teaching, and I love the whole atmosphere of helping students. And I guess because—it’s the first thing I tell my students, “I not only understand where you’re coming from, I was a student here and I sat in those seats.”…So it just kinda comes full circle, and you can relate.</td>
</tr>
<tr>
<td>I’m not only a first generation, but I was also divorced when my children [were young]…So I’m like a typical community college student. That probably explains my passion for what I do. It also helps me relate more to the students and their issues.</td>
<td>She was passionate about it. She wanted to make it happen and she was gonna make it happen.</td>
</tr>
<tr>
<td>We really don’t say no too much, so we stretch ourselves. But we continue to do that because it’s important to do. It’s just a place that wants to help students be successful, to help the region be successful and build a healthy community…I think sometimes people think we’re a little bit too comprehensive because we are busy, busy people, but we’re pretty passionate about that.</td>
<td>Those are the people who drive those committees. Those people who have that type of passion.</td>
</tr>
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**Finding 1:** A convenient, fast data system openly accessible by the college community facilitated committee progress toward quality improvement goals.

Eleven of twelve respondents at colleges with productive QIC progress spoke of fast and simple ways to directly access data presented in easy to understand formats.
System technology also permitted insertion of data into reporting documents to facilitate timely review of student success at both program and institutional levels. One college utilized a “data warehouse” that allowed open access to internal analysis of student achievement across and within divisions, courses, and sections.

Conversely, seven of twelve respondents at colleges with stalled QIC progress described the presence of a “gatekeeper” who responded to requests for internal data analysis. While the gatekeepers were responsive to these requests, provision of results was often slow due to limited staff and the unwieldy nature of the database system.

**Finding 2: Reliance on internal and external data rather than anecdotal information and opinions to inform decision-making was characteristic of committees that made progress toward quality improvement goals.**

Tables 3 and 4 present representative quotes from the narratives of respondents at colleges with productive QIC progress that were immersed in accounts of data use as integral in decision making within the college. They shared examples of institutional research data being used to support funding requests for instructional equipment, program development, and curriculum modifications. Data was also utilized to improve organizational products and processes. Directly connected to student learning, institutional research was used to match teaching modalities to student learning styles as well as run predictive analytics to examine historical data and make predictions about student success as well as modify course offerings, support services, and teaching styles. These colleges also engaged in a process of “co-inquiry” where a team of colleagues would venture forth together to find the data to support or refute a specific argument.

In terms of empirical literature, respondents reported that proposals for new programs or funding commonly contain references to the research literature. In general,
it was not viewed as influential on its own merits. Arguments considered persuasive included a description of how the findings were applicable to the institution’s demographics, dynamics, and current institutional goals.

Conversely, narratives of respondents at colleges with stalled QIC progress reflected a paucity of references to data use within the decision making process.

**TABLE 3**

**Use of Data to Inform Decision Making**

<table>
<thead>
<tr>
<th>Colleges with Productive Committees Use of Internal Data</th>
<th>Colleges with Stalled Committees Reliance on Anecdotal Information</th>
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<tbody>
<tr>
<td>Now during program review they can say, “We need this resource to make the program more effective.” And they have data to prove they need this item, so they’re starting to see now as they do their five-year cycles they’ve been able to get stuff that they needed for their programs and classes.</td>
<td>Most of the committee deliberations seem based on opinion.</td>
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<td>The program chairs and faculty—are collecting data about program outcomes and general education outcomes and they’re reporting on an annual basis….this information is used for program review.</td>
<td>[People are basing their arguments on] individual student profiles primarily, …hypotheticals…anecdotal evidence. I think a lot of individual cases of that.</td>
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<tr>
<td>Data indicated there was a greater success rate if the time period [between the completion of the pre-requisite and the subsequent enrollment in the next course] was limited to two years. There was even greater benefit if it was further reduced to one year. Although initially against it, the department was influenced by this information and is working toward instituting this policy. The data is responsible for influencing people’s thoughts on this.</td>
<td>Some people, myself included, would bring experiences because I’d taken different kids to different college and went through [this service] at all of them, …we talked about experiences people had because most everyone had been to some sort of higher education or worked at one and what their college did with [this service].</td>
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<tr>
<td>We’d usually come to an actionable conclusion. Then next year, we’d go back and improve both process and product based on what we had done. Each year, we got a little bit better about mechanizing how we’d run the surveys and how we would communicate what we found openly and let people use it. We’re still getting smarter now about how to use the information departmentally and in our programs.</td>
<td>We have a lot of different representation…We’re getting a lot of opinions from a lot of different people. Sometimes it works well; sometimes you have some voices that are very strong that don’t know how to work well with other people. So we’ve had a—it’s been a learning process through that.</td>
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</table>

They indicated most decisions were based on opinion, hypothetical student profiles, and anecdotal reports rather than any type of internal research or external evidence.

Noteworthy was the singular effort of one respondent who gathered and summarized both empirical research and best practices from other colleges to support her position. She explained,
I do think we could definitely benefit from more evidence for the decisions that we make...When people challenged [my viewpoint], I was able to point to that evidence as rationale....At least they know this is not just me. This is coming from the theory, the literature, and what’s happening practically in the field right now...I like to do that kind of work myself on the decisions I can actually impact--summarize that information for the people I’m trying to influence...and talk with them about it.

Respondents at all the colleges talked about “benchmarking” and “best practices” which is a required element of the accreditation process but few could provide specific details about how their college compared to others in the state. Interestingly, conversations with those where productive progress was made reflected concerns about benchmarking as a performance standard for those “at the head of the pack” as it provided little substance for continued growth and improvement.

**TABLE 4**

*Use of Benchmarking and Empirical Evidence*

<table>
<thead>
<tr>
<th>COLLEGES WITH PRODUCTIVE COMMITTEES</th>
<th>BENCHMARKING</th>
<th>EMPIRICAL EVIDENCE</th>
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<tbody>
<tr>
<td>We always had key performance indicators—penetration of new high school students into the college, where we lead the community—like that. [In the past], most were less directly involved with learning and more directly involved with things that were easily quantifiable—head count, seat count, FTE—those kinds of things. One of the challenges has been...to move from that point to get to an area that respects how we help students learn—like graduation rates and retention rates of students course to course, semester to semester, year to year...[Our involvement with a national project] as helped to heighten our interest and attention to indicators of student success, and not just indicators of institutional success.</td>
<td>You could have something that’s well supported by the literature, but we’ve already done that, didn’t work, not gonna do it again kind of thing. Or it wouldn’t make very much of an impact. Yes, that’s all nice, but what you’re asking this much money for will only affect one department in this very narrow way. So you could have the backing of the literature and it’s still not funded. Whereas someone else who has a really innovative idea, and it’s truly something that would fit the organization very well, that may not have been very well supported (in the literature)—but maybe they could go find support financial support for it.</td>
<td></td>
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<tr>
<td>I was part of a [national] consortium and got the opportunity to meet with many other institutions. We shared best practices and talked about what we’re doing and what they’re doing. We came back with some ideas that we’ve since implemented and we gave them ideas that they’ve implemented.</td>
<td>I’m supporting my request for funding [through this internal grant] to do this project because there’s evidence in the literature, there’s evidence in the site visit that I made. I have evidence that this might be effective here because it works [at other schools].</td>
<td></td>
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</table>
If you benchmark constantly and you're always in the top whatever, how does that help you improve? If you benchmark and you're one percentage point better than someone, is that good enough? What does it mean? So because of the [accreditation requirements], we've really been talking a lot about, well, not only what benchmarking we're doing, but also how meaningful it is.

Sometimes [faculty] will come forward with a proposal for funding based on something they've found in the literature—maybe through their grad school or doctoral program—and it's something they want to do for their own research. So that's nice, but what does it mean in terms of how this is going to move the organization forward or improve student learning? How does this fit with the mission?

Do you just want to be one step ahead of everybody else, or do you want to say we can do better than this? So is benchmarking even important? That's the conversation we're having now. Where is it meaningless? Where is it meaningful?

What data do you have to support that what you're doing now—the way you're doing it now isn't working? Is this a response to that or is this just another new, innovative idea that you have that isn't based on anything other than literature?

We were creating a new model. We needed every little piece of information we could get—best practices from other schools that we thought would work here.

That's what's nice about working with community colleges. It's great when the literature supports you and you might have a better chance at doing what you want to do. But on the other hand, there's a willingness to sometimes take—and we're not talking about huge amounts…but this is just a way to do something that is clear that it might make a difference.

[My colleague] is constantly looking for stuff. He's always sending, you know, "Here's an article I found." So we have enough people who are into that, who do take a look at that stuff.

**Finding 3: Quality improvement committees grounded in a culture of innovation made on-going progress toward established goals.**

All respondents at the two colleges with productive progress shared stories infused with an enthusiastic vision of the future as portrayed in Table 5. They told tales filled with pride for their inventive accomplishments and a determination to remain “at the head of the pack.” Sustaining connections and projects with national professional associations and grant foundations created a momentum that kept them building on their strengths and minimizing their weaknesses. Staff, faculty and administrators all voiced a willingness to risk blazing a trail of innovation in search of ways to improve past practices that had outlived their usefulness to meet future demands.

In contrast, ten of twelve respondents at the two colleges with stalled QIC progress shared stories steeped in frustration as they came up against attitudes ingrained
in the status quo, mired in organized labor dynamics, and stuck in unresponsiveness to novel suggestions. They spoke of “keepers of the past”, “old fashioned ways” and silence in the face of new ideas. Their focus was on identifying areas of weakness and attaching accountability for change. Interestingly, while the stories from respondents in the second group of colleges depicted an attitude of constancy within their culture, they themselves maintained attitudes of innovation more like the respondents in the first group. In fact, all respondents associated with stalled committees described their motivation for becoming involved in the student learning QIC as a desire to influence positive changes within the institution.

**TABLE 5**
**Culture of Innovation**

<table>
<thead>
<tr>
<th>Colleges with Productive Committees</th>
<th>Colleges with Stalled Committees</th>
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<tbody>
<tr>
<td><strong>Culture of Innovation</strong></td>
<td><strong>Culture of Stability</strong></td>
</tr>
<tr>
<td><strong>Innovation &amp; Creativity as Motivators:</strong> There’s incentive, there’s creativity, there’s innovation, there’s visioning, and that motivates people to move forward.</td>
<td><strong>Status Quo:</strong> So I’ve always been, what can we do there to [improve]...the courses with a high drop out failure rate, but you have the keepers of the past everywhere you go [so nothing changes].</td>
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<td><strong>Trailblazers:</strong> Look, we wanna be one of the first ones out there. We don’t wanna be one of the last ones. We want to be the ones to say, “Here—here’s the idea. The rest of you can follow our lead.”</td>
<td><strong>Status Quo:</strong> The problem is you get a couple of old timers who say, “Well, we should just do it the old way. I don’t have time to do it.”</td>
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<td><strong>Risk-Takers:</strong> I think that there are some institutional cultures that are risk averse, ours is not. Because sometimes when you jump out there, you learn a whole lot about yourself as an institution or department. We’ve done several things in this office where we’ve tried something, we’ll back away, look at it, tweak it, repackage it a little bit, try it again.</td>
<td><strong>Unresponsive to New Ideas:</strong> I said, “I know this [idea] is going to go over like a lead balloon, but if you really want to solve your problems… [and then I presented an innovative new idea]...and they all said, “Well we know that’s probably something we should do but,” and then they got silent and people moved on.</td>
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<td><strong>Innovation:</strong> We did some new things that have never been done before</td>
<td><strong>Unresponsive to New Ideas:</strong> Sometimes ideas are thrown out and there’s silence, and then we move on to the next thing. So I don’t know what the magic thing is for it to resonate with the group and have people really get on board with it.</td>
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</table>
| **Connection to Future Demands & Trends:** I like to think that the primary role I serve is to lead the people to think to the future…I look for opportunities at the state and national level that help us be strongly connected with what is current and what is coming. | **Union Dynamics:** If the union “works to the contract” that means the committee structure gets shut down which would mean the institution, and hence the students, pay a price. The value of “commitment to students” v. “commitment to contract” are in
External Interactions: [When we got stuck], that’s where I went outside just to get someone to come in to give a different perspective—an outside perspective that would stimulate people to think about alternatives.

Ahead of the Pack: A lot of the things the state has decided are good things to do we're already doing.

Front of the Pack: …college values innovation and being at the front of the pack.

Discomfort with Change: With this system you’re constantly saying, “What can we do better? How can we make it better?” And you’re never satisfied. That is uncomfortable for some people.

Strength-Based View of Process: This is using the abundance model and so we didn’t look at those areas where we were weak.

Deficit-Based View: In coming up with new teams…you have to start by looking at existing processes and where they are falling down.

Fitting Innovation to the Culture: We utilize [several TQM models] and have had some exciting results but we haven’t put in the box where everything we do is according to [some benchmark]. We’re using their research and using their models to give people an opportunity to shape those models to fit our culture.

Accountability: We’re going to hold them accountable to not only take this new idea we just found, but it’s your job to come back to report to us what’s happened with that initiative.

Stretching & Reaching: You don’t want to work in a place that’s insular—in a place that doesn’t look beyond the horizon. That’s what I’ve always wanted is to be in a place where there’s a lot of stretching and reaching beyond your potential. I’ve always been able to find that.

Accountability: Maybe [someone at the top] needs to say, “This is now going to be this Vice President or whoever’s responsibility to oversee this, and a report needs to go back to that person so that we’re sure what’s happening is carried out because why did we do all that if it is not going to happen?

Finding 4: Quality improvement committees that made on-going progress toward established goals engaged in a process of honoring relationships and building consensus rather than relying on organizational structures and hierarchical authority.

The primary focus of the QICs at colleges where strides were made toward accreditation goals appeared to be on the process of group deliberation. These committees placed relationships at the center of their approach and honored the dynamic interplay of individual talents, departmental interests and organizational capacities as part and parcel of the process that is group decision making. They created a hospitable environment for communication and leaders facilitated balanced interactions between participants as they worked their way toward consensus. There was a willingness to “keep talking” in an effort to sincerely address concerns, seek common ground, and
identify areas of possible compromise until a solution was constructed that most would comfortably support. Diverse points of view were deliberately sought out for the value they added to a broad-based understanding of the challenge at hand as well as potential solutions. Written documents that emerged from the process were circulated at each step along the way to ensure that viewpoints were accurately represented and incorporated into the final product.

In contrast, the primary focus of the QICs at colleges where progress toward accreditation goals was impeded seemed to be on the product of group deliberation. These committees placed structure at the center of their approach and utilized the chain-of-command to hold people accountable for the outcomes that were produced through these channels. They allowed a hostile environment for communication to take hold that permitted dominant group members to control the direction of the group. Broad representation was sought out in an effort to ensure responsibility and accountability without particular regard for input offered. Attempts were made to push progress toward certain outcomes despite the lack of consensus in the group and one group could change the recommendations of another. Extensive comparative data on these dynamics is presented in Appendix B.

Finding 5: Quality improvement committees engaged in active dialogue with dissenting voices made on-going progress while stalled committees were immersed in patterns of personality conflict and collective departures from the shared governance process.

As characterized in Table 6, nine of twelve respondents at the two colleges with student learning QIC progress identified active engagement in dialogue with dissenting voices as a key factor in facilitating advancement toward goals. Stories reflected a view
of conflict as a necessary and vital component to problem solving. Opposing voices were purposefully sought out and invited to present their position to the group for consideration. Respondents conveyed value in the process of discourse as a way of constructing an inventive solution that incorporated the views and interests of all participants. As one respondent aptly shared, “You don’t have the answer until you really think about it together.” Committee members tended to view staunch opposition in terms of principles rather than personalities that included academic integrity, system simplicity, or dedication to the precepts of a discipline.

**TABLE 6**

**Engaging with Dissenting Voices**

<table>
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<tr>
<th>PRODUCTIVE COMMITTEE PROGRESS</th>
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<td>What I think is always the determining factor in having something go well is to be persistent enough, and just keep working through the issues of disagreement until you have a critical mass of faculty…Once you have more faculty supporting something than you have opposing it, you’re off and running, and that’s what happened here.</td>
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<td>We don’t prevent the opposing position. We invite it. We try to give everybody the floor and then hope for a consensus…not everybody has to agree, but by the end of the …decision process…there is a sense that we reached consensus, and therefore, if we opposed what the decision is, we’ll support it. That’s just part of our culture.</td>
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<td>That faculty member has always been the devil’s advocate. And if you were to interview him, he would say he’s there to make sure this never becomes a burden for faculty. And so you might interview somebody on the team that would say, “Oh, he’s too outspoken.” But I don’t think so. I think everyone appreciates his point of view and understands that he really is advocating for simplicity, not making this so complicated that faculty feel overwhelmed.</td>
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<td>And so I think it’s better to deal with them directly, give them their chance to pitch their point of view, and if people agree with that then let’s go there. If people don’t agree with that then generally it’s like, “Okay, I’ve made my pitch and I see the group is feeling this way. All right, I’ll back off.” So I just personally think that’s a better way to deal with it because I just don’t like things festering. What it will do is tear everything down.</td>
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<td>In fact, [the faculty from that department] requested an audience with the [project team]. We put them on the agenda. They came in, they gave a whole formal presentation on their position, and it was well received, and the most outspoken faculty member on the [project team] was very civil through that whole presentation. He simply made a follow-up comment that he wished to be on the record that he didn’t agree with their position, but it was very pleasant.</td>
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<tr>
<td>There is one person in particular who teaches [in this area]. I love him dearly because he’s the devil’s advocate, and he will point out, “But what about this side?” And if you can get him to come to consensus, well then you know you’ve been successful.</td>
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You know, this person has not been on many of the committees, but he’s very— he is very concerned about academic freedom, and just maintaining academic levels—integrity—that’s the word I’m thinking of. So he’s very concerned about that, and so I know he’s not just looking for it’s all about me. He’s concerned about academics in general. I have worked with him on several committees, and I’ve specifically asked for him to be on those [committees].

He went around and talked to the other people who had been in the meeting to really get the whole sense of what was going on. It wasn’t just one person and another person having a personality conflict.

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<th>You know, this person has not been on many of the committees, but he’s very— he is very concerned about academic freedom, and just maintaining academic levels—integrity—that’s the word I’m thinking of. So he’s very concerned about that, and so I know he’s not just looking for it’s all about me. He’s concerned about academics in general. I have worked with him on several committees, and I’ve specifically asked for him to be on those [committees].</th>
<th>So I guess I would say you know number one we invited in the faculty members that were concerned about what was going on from [that department]. Consider all of their input after they left. You know, for a couple of sessions, we kind of talked about it and thought about it and mulled it over what to do. In the end decided that we still wanna go with the idea of having something generalized.</th>
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So I guess I would say you know number one we invited in the faculty members that were concerned about what was going on from [that department]. Consider all of their input after they left. You know, for a couple of sessions, we kind of talked about it and thought about it and mulled it over what to do. In the end decided that we still wanna go with the idea of having something generalized.

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I listen to the negative voices because there’s wisdom in those, and then I create buy-ins, sometimes with one person at a time.

Similar accounts were conspicuously absent in narratives from the two colleges with stalled student learning QIC progress where conflict was generally viewed as undesirable and an impediment to progress. Ten of twelve respondents at these two colleges described committee processes immersed in personality conflicts and collective departures from the shared governance process as characterized in Table 7. Stories reflected verbal outbursts and personal attacks by individuals and departments directed at both individuals and other departments. Words like “ugly”, “horrible”, “abuse”, and “bullying” described experiences that left people feeling like “damage had been done.” Most seemed to feel powerless to change the dynamics and attributed the conflict to enduring traits of “human nature” or “personality” and hence, not subject to change. Most of the narratives around these incidents were infused with tones of anger and resentment much like the lack of resolution that seemed prevalent in the stories. Overall, dissatisfaction was expressed in exceedingly direct ways while conflict resolution tended to be indirect at best, nonexistent at worst.
TABLE 7
Personality Conflict & Exit from the Shared Governance Process

<table>
<thead>
<tr>
<th>STALLED COMMITTEE PROGRESS</th>
<th>EXIT FROM SHARED GOVERNANCE</th>
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<tbody>
<tr>
<td><strong>PERSONALITY CONFLICT</strong></td>
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<tr>
<td>It was just was an ugly situation and they screamed at everybody, and it was awful. It was just awful… The nastiness that I saw, the yelling at a dean—I mean I’ve never witnessed anything like that. Most of committees here you don’t see that. And this was—it just was very upsetting. And you can’t look at people the same way. And you don’t talk to your colleagues that way, let alone your supervisors. It just was an ugly situation.</td>
<td>We’ve also had the case where people from [a couple of] departments resigned from the committee, which is the worst thing that could happen because then, we’re really not getting anywhere. So, yeah, that’s been a negative experience.</td>
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<td>Unfortunately, I think we had a couple of people that—they’re just not good playmates. No matter what I think would have happened, they’re not good in that type of a role. So what can you do?</td>
<td>We need to put a feeler out to get some more people. So then you think you have the committee filled, and then these people left. We just got full committee, and now we can—and okay, stop the train for more passengers.</td>
</tr>
<tr>
<td>Sometimes when you make personal attacks, that’s a little harder to swallow. It’s frustration, it’s screaming out, but personal attacks are not going to solve anything.</td>
<td>I sent him an e-mail and said, “I think we need to work this through.” And he just never answered. And so I said, “Okay; well, I tried and I’m done.” And then [that whole department] wouldn’t come.</td>
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<td>With [that department], there was really some abuse. I mean, horrible things. Not to me, but to – directed to [the administrators], which was bullying behavior from my viewpoint.</td>
<td>The union officers resigned the main committee when labor negotiations soured. Other faculty members were sought to fill the spots but little headway was made in the committee work after that.</td>
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<tr>
<td>Then it was just a big argument, and she would get nasty to other people on our committee.</td>
<td>[This department], although I know they’re not happy, they at least have come and have articulated exactly what they think, but again quit.</td>
</tr>
<tr>
<td>Wow, I was livid. I sent a nasty e-mail to the dean and others about that, and that as of now we should change.</td>
<td>Most of the end result is getting better was because the one person stepped down from the committee.</td>
</tr>
<tr>
<td>Sometimes I don’t know if [the conversation] doesn’t go well because of the person who’s asking. Maybe it was more of a personality issue.</td>
<td>I’m divorcing myself from this committee. It’s time to move on.</td>
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DISCUSSION

This study began as a rather straight-forward exploration of how evidence-based management practices identified in the medical field translated to higher education. We chose colleges with an established record of excellence and commitment to quality improvement practices so as to learn more about ‘best practices’ in the field with regard to how education professionals source, evaluate, and utilize information to make
decisions about quality improvement practices at their institutions. We hoped to identify sources and types of information that college professionals used, discover how they defined and determined the quality and relevance of that information, and describe how it influenced the decision-making process.

We did, in fact, find significant differences in how community colleges use information and data to make decisions. While this discovery alone was of value, it was overshadowed by other unsuspected factors with more profound implications for quality improvement practices of colleges. Much like Sitkin & Stickie's (1996) study of total quality management implementation in a science lab and Bunderson & Thompson’s (2009) study of zookeepers, once the study was underway what emerged was an intriguing tale of passion, power, and paradox far more interesting and impactful to our problem of practice than simply introducing ‘evidence’ into quality improvement efforts.

Overall, evidence-based management in higher education appears to be both process and product of structurational forces. We begin our discussion and conceptual model construction with a comparative focus on four factors suggested within the literature as potentially relevant to the practice of evidence-based management in an academic setting. These included: elements of the information, characteristics of the individuals, features of organizations and aspects of the dialogue. We then end with an analysis of the complex relationships that might account for what we observed.
Information

A basic requirement of evidence-based management in higher education appears to be the availability of a variety of empirical, professional, and institutional sources of information in user-friendly formats. Despite predictions in the literature discussed earlier that the educational research base would be of limited value to evidence-based management, there were some instances of empirically-based data being introduced into the decision-making process. Similar to the medical field, rigor and relevance of information presented was of primary importance to committee members but unlike the medical field, it seemed to be a basic characteristic of any empirical evidence presented. The greater preponderance of academic training and access to empirical databases within higher education may account for this difference. Interestingly, empirically supported
general arguments were generally given less credence than arguments characterized by institutionally-based relevance without empirical support.

Patterns of information use were more characteristic of ‘evidence-informed’ practice than ‘evidence-based’ practice in that there appeared to be a broader definition of ‘evidence’ that included consideration of context-specific information, professional association newsletters and publications, sector-specific and mainstream news sources as well as governmental bodies, non-profit foundations, and public opinion. Also, consistent with observations in the medical field discussed earlier, empirical findings presented in user-friendly formats that included one-page non-academic summaries with specific recommendations were more likely to be incorporated into decision-making dialogues. Institution-specific data appeared to be the preferred data source yet its availability was influenced greatly by the technological capabilities of each college’s institutional research office. Some colleges were limited to demographic information related to students and enrollment while others had the technological resources to conduct complex predictive analytics to examine overall patterns of student success related to curriculum development. For example, one school was able to institute evidence-based time frames on math prerequisite completion by empirically studying historical enrollment and achievement data.

**Individuals**

Based on literature within the medical and education fields, we expected to find significant differences between the ways staff, faculty and administrators utilized ‘evidence’ in decision-making (Estabrooks et al., 2003; Kezar & Lester, 2009; Meijers et al., 2006; Rubin, 2004; Swenk, 1999). However, our qualitative analysis yielded no such
differences; in fact, respondents were virtually indistinguishable based on professional role. One exception to this observation was the institutional research staff who were clearly key in the process as either consultants or providers of data relevant for their institution. Unfortunately, Cohen & Brawer (2008: 386) reported, “In 2007, about half the colleges employed just one or fewer institutional research persons on a full-time equivalency basis” and observed that community college institutional research offices “are not designed with research in mind.” Expanding this staffing pattern will likely be necessary to accommodate evidence-based management practices.

Consistent with literature that indicates information congruent with established personal or professional beliefs is more likely to be accepted and utilized than information contrary to established beliefs, there was an overwhelming endorsement of the value in utilizing information, data, and empirical findings in decision-making. It would seem reasonable to conclude that this acceptance is likely due to a “celebration of academic values such as honesty, sustained curiosity, the communication of knowledge, and continued intellectual growth” characteristic of educational settings (Dill, 1982: 315). However, this was contrary to literature in the field of education that indicated community college cultures were adverse to complex applied research (Morest & Jenkins, 2007).

In sum, individuals who value the information gathered are more likely to utilize it in decision-making. Educational professionals respect the creation of knowledge and appear especially well-versed in the skills necessary for engagement in a process of inquiry--formulation of answerable questions, experimentation, discovery of valid and reliable information, systematic reasoning, critical appraisal, and open debate.
Individuals infused with a sense of passion for education and a sense of calling to the community college mission are likely to mobilize their energy and persistence toward challenging institutional goals. In addition, institutional research staff are likely to play a key role in identifying, accessing, and summarizing evidence in meaningful ways.

**Organizations and Dialogue**

Organizational characteristics are increasingly the focus of studies seeking to understand the complexity of research utilization in practice, however, the primary focus appears to be on resources and support directly related to the use of ‘evidence’ (Belkhodja et al., 2007; CORD, 2006; Meijers et al., 2006). Factors such as time demands and workloads as well as system capabilities and routines become salient in implementing evidence-based practices. While these practical considerations seemed to be supported in the present study, there were general attributes of the organization that appeared more salient to the issue of how information was used, or not used, in decision-making processes. These organizational aspects appear inextricably connected to the quality of dialogue within the committee process and are discussed below.

**Passion, Power and Paradox**

The most intriguing of our findings were those not directly related to information use by individuals, but those reflective of larger institutional patterns of interaction. While we were initially interested in how the skills and choices of individuals influenced organizational outcomes, as we began to see similarities emerge among individuals within the same institution, we realized we had serendipitously encountered some patterns related to the ways different organizations influenced individual choices.

Consistent with the grounded theory method of theoretical sensitivity, we narrowed our
analysis to four of the five colleges with the most dramatic differences to glean a greater understanding of the dynamics as highlighted in the findings section.

These findings are not unlike those reported by Barley (1986) where implementation of identical radiological imaging technology in two similar radiology departments resulted in different structural outcomes. This summons to mind Giddens’ (1984) institutional theory of structuration, in which he argued that structure is “both product of and a constraint on human endeavor” (Barley, 1986: 79). Consistent with the thoughts of Meyer and Rowan (1977) who proposed that the structure of an organization along with the “life-worlds” of the individuals within it would impact technology implementation, Barley concluded, “Since the social context of actions and interpretations is important, it becomes unsound practice to lump together organizations with radically different institutional histories and ecological milieux” (Barley, 1986: 81).

In the present study, a new accreditation system essentially served as Barley’s technology. Colleges had the flexibility to identify institutionally relevant quality improvement goals but were required to adopt a predetermined uniform process of implementation regardless of the “ecological milieux” within the college culture. As such, it is entirely possible that significant differences in the social ecology described above could account for the remarkably dissimilar outcomes observed. That is, imposition of a collaborative system upon a cooperative structure with a consensus-based culture is likely to proceed in distinctly different ways from one imposed on a bureaucratic structure with an adversarial culture.

The differences between these two groups of colleges is even more compelling when we consider the impressive level of passion and commitment expressed by all
respondents for their work within the community college mission and the fact that these colleges were selected based on their established commitment to quality improvement practices as well as their proven track record of success.

How is it that a group of passionate committed educators can come to agreement upon a course of action that damages the very thing that drives their passion? That is, within the colleges where progress was stalled, respondents simply accepted that operating within their adversarial dynamics was the only option, even if it meant placing their accreditation in jeopardy. Individuals seemed carried along by the adversarial dynamics and the system seemed unable to effectively employ any problem solving approach beyond the entrenched patterns created by a staunch “us v. them” culture. Caught in the classic structurational paradox between agency and structure, respondents were more likely to make attributions of a derogatory personal nature to explain individual actions than acknowledge that the adversarial culture of the institution to which they were committed could be constraining individual choices.

However, if we accept stucturation’s premise that a culture where individuals are deeply embedded in entrenched routines that limit their range of choices will subsequently ensure continuation of that same culture (Barley & Tolbert, 1997; Poole & Van de Ven, 1989), how are we to account for institutional change?

Current literature on institutional theory reflects a need for greater understanding of the exact processes, or “micro-foundations,” that account for the dynamic interplay of structure and agency (Barley, 1986; DiMaggio & Powell, 1991; Greenwood et al., 2008). In particular, the literature reflects our “limited understanding of how power, conflict and
fundamental social interests affect and are affected by institutional processes” (Greenwood et al., 2008: 25).

In the present study, the two colleges mired in conflict and impeded progress both had faculties represented by collective bargaining agreements where the union officials also served as the faculty senate. Cameron (1985:389) noted, “The topic of faculty unionism and its relationship to the functioning of institutions of higher education is a controversial and often emotional topic,” but yet it is a reality that must be acknowledged. In 1994, “70% of all collective bargaining agreements nationwide at institutions of higher education were at two year colleges” (DeCew, 2003: 13) and in 2005, 43% of full-time faculty in public community colleges were working under collective bargaining agreements (Cohen & Brawer, 2008; Wickens, 2008). Although the absence of a faculty senate that retains control over academic matters is not necessarily characteristic of unionized campuses (Decaw, 2002; Wickens, 2008), the scope of these contracts has broadened to the point where “practically everything concerning institutional functioning is negotiable” (Cohen & Brawer, 2008:149; Garfield, 2008; Wickens, 2008). While there is substantial and inconclusive debate about the impact of faculty unions on institutional effectiveness (Cameron, 1982; Cameron, 1985; Cherim, 1982; DeCew, 2003; Garfield, 2008; Kater & Levin, 2005; Levin, 2006; Wickens, 2008), the presence of the union did appear to influence the experience of individuals in the present study.

On campuses where progress was made, consistent with concepts of “organizational citizenship behavior” (Smith et al., 1983), the passion and commitment of QIC members was channeled into challenging duties above and beyond those normally
expected; they appeared motivated by the opportunity to use their skills and talents to serve the institutional mission of excellence in education. These efforts appeared to be respected by their colleagues who were appreciative of their willingness to serve in a daunting but necessary role on the campus. In this sense, their behavior was consistent with the cooperative culture of the college.

However, on campuses where progress had been impeded, the same types of behaviors by QIC members appeared to be a significant departure from the norms of the adversarial culture. These observations are consistent with the literature around “positive deviance” (Spritzer & Sonenshein, 2003) that includes institutional entrepreneurs (Hardy & Maguire, 2008), tempered radicals (Meyerson & Scully, 1995), and courageous principled action (Worline & Quinn, 2003).

What all these concepts share in common is a sense of “passion” that spurs innovation and a sense of “calling” that infuses work with personal and social significance beyond material rewards (Bunderson & Thompson, 2009; Cardon et al., 2009; Dik & Duffy, 2009; Hall & Chandler, 2005; Pratt & Ashforth, 2003). These concepts also reflect a willingness to “sacrifice money, time, and physical comfort or well-being for their work” (Bunderson & Thompson, 2009: 52; Cardon et al., 2009; Hall & Chandler, 2005). Certainly this type of passion was evident in our respondents and could, quite likely, account for a portion of the conflict observed as the ideological commitments of calling met the transactional commitments of contract (Hall & Chandler, 2003; Sitkin & Roth, 1993; Thompson & Bunderson, 2003; Wrzesniewski et al., 1997; Wrzesniewski, 2003). While the immediate impact of this conflict was to impede progress toward accreditation goals, according to the dialect model of structuration, it is
entirely possible that these types of “misaligned interests” and “interinstitutional incompatibilities” could combine with the inefficiencies created by the conflict and departures to stimulate a “reflective shift in consciousness” that would mobilize a core group of actors to coalesce toward a plan of collective action that would create the momentum for meaningful institutional change (Seo & Creed, 2002: 232; Hardy & Maguire, 2008).

Given these dynamics, several conjectures seem reasonable. First, organizations that operate from a process-oriented, relationship-building foundation are likely be more successful with incorporating evidence into the decision-making process. These organizations are more likely to be practiced at the collaborative skills necessary to build consensus and buy-in within the autonomous culture of loosely-coupled systems that define higher education administration.

Second, active engagement with external professional collectives appears to create a favorable milieu for innovation to flourish. In addition, a process of inquiry appears to create a constructive channel for deliberative dialogue where the merits of the evidence can be discussed alongside the professional values and expertise of those around the table to construct a comprehensive picture of applicability and viability of any particular course of action.

Third, consistent with the theory of structuration, the interplay between individuals within the organizational context during the process of inquiry is likely to facilitate nonrecursive new social relations that could create a “reflective shift in consciousness” that appears necessary for lasting institutional change (Seo & Creed, 2002). As discovered by one respondent, utilization of ‘evidence’ within these
interactions may prove to be an effective tool for moving discussions infused with personality conflict toward a process of inquiry more suited for effective problem-solving and decision-making.

Finally, the dynamics of faculty collective bargaining also appear to be nonrecursive elements in the structuration process that influence the actions of and constraints on both individuals and organizations. As observed in this study, the transactional focus of contracts that impact nearly every aspect of institutional operations is likely to introduce an element of power and conflict into the inquiry process. Unfortunately, there is “scant attention paid to issues of power and conflict” within the evidence-based practice literature (Nutley et al., 2007). Perhaps the context of higher education will prove to be an area ripe for studying these issues as the elements of information and individuals that maximize evidence-based management appear relatively stable while the contributions of academic reform and organized labor may create the kinds of conflict situations in need of further study.

LIMITATIONS

The thoughtful construction of any research endeavor requires a certain level of specificity that by its very nature limits the generalizability of the findings. The present study is no exception. Several such limitations are noteworthy.

First, the colleges included in the sample were limited to the largest public community colleges in a mid-western state involved in a new data-driven quality improvement accreditation system. As such, the findings may not be applicable to smaller community colleges, public four-year universities, private and for-profit
institutions, or research universities in or outside this particular state or those colleges involved in different accreditation formats.

Second, this particular system of accreditation is reserved for colleges with a well-established track record of institutional excellence. In addition, two of the colleges earned participation in two national initiatives supporting a data-driven approach to institutional change supporting student success. As such, these colleges represent the best of what this state’s community colleges have to offer and may not be representative of other community college practices or cultures.

Third, the student learning quality improvement committees represent a very specific and limited view of college operations. Translating these findings to more comprehensive aspects of college administration is likely not appropriate. In addition, faculty involved in the process are a self-selected sample and may not be representative of the views of the larger faculty population on each campus.

Fourth, the original focus for the sample was on the differences between individuals based on their roles at the college and yielded a respectable sample size of thirty-one individuals. As the principles of theoretical sensitivity led us to broaden our focus to differences between organizations, the small sample size of four became a limit to generalizability.

Finally, the principle researcher in this study has served as a faculty member at a community college for the past nine years. While specific reflexive practices were consistently utilized to minimize any latent researcher bias, the potential for such must be acknowledged.
IMPLICATIONS FOR PRACTICE AND FUTURE RESEARCH

First, most of the empirical work to date with regard to evidence-based practice and management has concentrated on dynamics directly related to the use of evidence. It would appear that evidence-based management in higher education is more about the process of inquiry around information moderated by the structurational influences of individuals and organizations rather than simple application of empirical findings. This study highlights the need for greater understanding of the specific behaviors, decision-making processes, and organizational dynamics that lay the foundation for successful implementation of evidence-based management, particularly where issues of power, politics, and conflict may play a dominant role in the interactions.

Second, given the key role community colleges will play in U.S. economic development our hope is that this study will stimulate scholarly interest in applied research to support continued improvement of this element of the higher education system that serves nearly 40% of all college students (Kater & Levin, 2005).

Third, given recent funding cutbacks along with calls for reform, it is likely that faculty unions will continue to thrive (Wickens, 2008). Despite the present findings, there is certainly much in the literature to indicate collective bargaining has served a positive function in the higher education system. The goal, it would seem, is to preserve the spirit of collective action along with the passionate spirit of the educator while serving the needs of the students and the social interests of public education. Consistent with the theory of structuration, this may require “de-coupling” some aspects of institutional functioning from the collective bargaining dynamics (Meyer & Rowan, 1977).
Finally, although “there is ambiguity surrounding the genesis of action and structure” and the literature is unclear about “what forces shape the way people use institutions and structures available to them” (Poole & Van de Ven, 1989: 569, 575), there appears to be promise in exploring passion and calling as leverage for institutional change (Cardon et al., 2009; Meyerson & Scully, 1995).

**APPENDIX 1: Interview Protocol**

1. Tell me about your educational experiences and attainment. At what point in your young life did you know you wanted to go to college?
2. What led you to the field of education as a career?
3. Tell me a narrative that will help me understand the mission, vision, and culture of your college.
4. Tell me about your work here at the college.
5. How did you come to be involved in the quality improvement process and how has it gone?
6. Tell me about a particular decision or problem the committee worked on that went well.
   A. What factors were important?
   B. Who were the people who were instrumental in driving the success and what did they do that was helpful?
   C. What information was considered in the discussion and decision?
      i. What prompted the introduction of the information?
      ii. How did the process unfold?
         a. Who presented the information
         b. At what point was it presented?
         c. How were various pieces of information accessed, presented, discussed?
         d. How were various pieces of information given weight in the process and final decision?
         e. What challenges and successes were experienced?
7. Tell me about a particular decision the committee worked on that didn’t go well.
   A. What factors were important?
   B. Who were the people who were instrumental in driving the barriers and what did they do that was not very helpful?
   C. What information was considered in the discussion and decision?
      Repeat prompts for #6C above.
8. Tell me about a time an impasse was reached or a time when a strong argument or opposing viewpoint was voiced.
   A. What prompted the impasse or viewpoint?
B. What were people basing their arguments on and how did that influence the process?
C. How were people expressing themselves and how did that influence the process?
9. Tell me about a time you believed certain actions should be taken that were not taken into account by others on the committee.
10. If you were in charge of the committee, what information, arguments, or priorities would you have liked to advance?
11. What advice would you offer for organizing the process in the future?

APPENDIX 2: Relationships & Consensus Building versus Structure & Authority

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<tr>
<th>Colleges with Productive Committees</th>
<th>Colleges with Stalled Committees</th>
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<tr>
<td>Relationships &amp; Consensus Building</td>
<td>Structure &amp; Authority</td>
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<tr>
<td><strong>Focus on Relationships as the Path to Task</strong>&lt;br&gt;Accomplishment</td>
<td><strong>Focus on Outcomes as the Path to Task</strong>&lt;br&gt;Accomplishment</td>
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| It just means that you have to determine, as a group, what’s gonna work. Is that everybody’s at least somewhat comfortable? Does it mean that this many agree and 20% say, “I’ll give it a shot and truly try”?…It could mean different things with different groups. After you’ve done it for awhile, people get to be—and sometimes feel free to say, “I know what you said, but I am just not gonna be comfortable with this. But I’m one person.” Okay, let’s keep talking. Usually, it’s those people who will get pulled along.  
I’ve never seen anything abandoned because people couldn’t come to some kind of understanding about how it could work and go forward—or—either agree to disagree and move forward or—it’s sort of that thing. You’re not gonna have 100% agreement. If you can come to—if you set this up ahead of time, as the group leader—like we’re gonna go forward if 80% of us can agree this is gonna be the direction we want to go. The other 20% are like, “Okay, I’ll give it a try.” But if 80% say yes and 20% say, “Over my dead body,” we’re gonna keep talking until we get to consensus. Usually, you don’t get stuck if you set it right. At least I haven’t had that experience. | So then you had this key department that needed to be part of the answer, now not even at the table…but there were some people who probably just wanted to say, „Well, let’s move ahead with what we can do without the involvement from [those departments]. But the problem with doing that is that you keep coming back around to, „Well, we really need to have them here.” …If you don’t have your faculty from that department on board, it’s just not possible.  
We went around and around, and finally it was like “You know what? Let’s stop this. We’ve gone around and around. Let’s just make a decision and move forward with it.” …And so that’s when [an administrator] said,…“If they refuse, we’re gonna do it anyway.”  
I think it has slowed us down tremendously…we have a lot of people that just wanna work and push things forward and don’t really wanna deal with all the politics and relationships and all of that. |

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<tr>
<th>Hospitable Environment Created for Communication</th>
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<td>Some people are very bold about their opinions, and some people are very quiet about things. It doesn’t mean that they don’t have opinions. They may not be wanting to step on somebody’s conversation, so they’ll sit and wait. And then, you know, some just barge in and you never get a chance, nobody took a breath, so I didn’t get a chance to get in there. So I think it’s important [for the leader] to try [and provide an opening for them] whenever possible.</td>
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<td>It requires that at least somebody on the committee says, “How about, well, Joe, what do you think about this? Or I haven’t heard much from the rest of you. How are the rest of you feeling? So I think it’s important for whoever’s leading that committee or somebody on the committee to say, “Well, you know, we’ve heard a lot from so and so. How about you, what do you think?”…So I think it’s important …that you have to have somebody who’s going to be willing to let everybody talk.</td>
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<tr>
<th>Hostile Environment Created for Communication</th>
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<td>When certain people would be missing, people were incredibly open and blunt. And then when people would come back—and it’s like I wish we could just be open and blunt all the time. Don’t come to me afterwards or send me an email afterwards. Say it there. But that’s not human nature.</td>
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<td>My position is sort of to kind be the time-keeper, so that if somebody stands up and disagrees, they’ve got three minutes, five minutes to make valid points, and then there’s rebuttal and everybody has a say. But if you already gave your say, you’re done.</td>
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<th>Engage Structure</th>
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<td>[When an impasse was reached], we have actually said, “We’re kind of done dealing with this. Let’s get a task force together. Let them make recommendations.” And so – because that again just became this tennis match. And it was like, “This is not working.” So we’ll try that as a strategy.</td>
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<td>I think we’ve really tried to develop a structure that could be repeated over and over again.</td>
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<th>Engage People</th>
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<td>You need to have people that can throw out ideas, and you need somebody who can kind of bring things together.</td>
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<td>She was a good peacemaker. She was good at listening and parroting back to us what we were all envisioning would happen.</td>
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<th>Repeated Meetings</th>
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<td>I’ve had repeated meetings over some things until we’re really clear about the path. We just couldn’t do it in one meeting, so we’ll agree to reconvene. Usually it’s with an assignment to go back and think about this, look at that, see if you can come up with another approach, and then we’ll come back together. That’s always worked.</td>
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<th>Limit Meetings</th>
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<td>[We strive to be] efficient and effective with our resources, ‘cause you know how much it costs to run a meeting, depending on who’s at the table on a per hour basis, it’s expensive…All the vice presidents and directors [decided on this] central counsel.</td>
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<th>Representation for Value in Diverse Points of View</th>
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<td>I picked two different people in two different areas trying to get people that I knew who either had strong opinions about things or people that I thought might be providing me with useful information. So I usually think about, “Well, let me think about my colleagues, who would I wanna work with? That’s an important thing, but I also wanna get the different points of view. I wanna have the different ideas.</td>
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<th>Representation for Value of Accountability &amp; Responsibility</th>
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<td>I really think it’s critical that you have all constituencies represented because, ultimately, you want everybody to be accountable for it and to assume responsibility.</td>
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Seek, Incorporate, & Accurately Represent Viewpoints In Final Solution

We all sat around and talked about it and made some suggestions. But before we had done that, I had sent out my draft saying, “Here’s what we’re gonna discuss tomorrow…” well, that afternoon, I get an email back from him saying, “Well, I’ve made a few changes here.” That’s cool. So then, for the next meeting I took his draft, my draft, and the discussion we had in-between and moved it a little bit more toward the center. I sent out a second draft. We came back in, made a few more tweaks. Within four meetings we had that completely finished.

I sent the draft out ahead of time…the next meeting I gave them the draft and said, “Here’s what I came up with, did I accurately reflect what you said?”

It’s important for everyone to share their thoughts because we aren’t all going to agree on stuff. But again, we have to come to consensus. We can’t just say, “Okay, well these three people decided. They’re in charge.” Maybe three of worked on a project, but now we’re going to show you what we’ve done and we’re asking for your input because we might change this. Someone didn’t like this, well, let’s see if we can fix that.

Invoke the Chain of Command & Modify Recommendations

The recommendations [of the subcommittee] were slightly modified and were sent forward and that just caused such anger. And so we’ve really tried to articulate—we wrote out a process chart—so that now when the new teams have formed we show them that chart, and we’ve said, “Everybody’s making recommendations. Recommendations can be changed.”

I felt that what we had talked about was captured with some minor working changes. I sent it out and said, “Just for your FYI, this is what the [central counsel] has approved to go forward to the President. [The chair of the subcommittee] was very upset and sent an e-mail, “We need to change this. This is all wrong.” And I just said, “It’s no longer in the [your team’s] hands. It is now in the [central counsel]…and here’s what [the central counsel] now wants to go forward…So basically nothing changed. And so at that point, [the chair of the subcommittee] withdrew.

Compromise

“Okay, you listened to me. I got a chance to express my opinion, my dissatisfaction, my whatever. You changed things a little bit so that I feel like I’m closer to what I was looking for, and I’m okay with it.”

He’s really looking out for everybody, so it changes your whole perspective. I may not have to agree with you, I can still respect you. I may not agree with your opinion or your idea of how something should be done, but okay, I can work with that, and maybe we can come to something kind of in the middle here that we can both live with.

Maintain Position

[That department] wanted to develop [this part of the project] and we kept saying, “No”…and they quit.

I didn’t feel like those folks gave the spirit of compromise enough effort.

Proceed with Consensus

We don’t proceed on anything until everyone at the table, whatever the group is agrees that we have consensus to proceed.

Proceed without Resolution

I’m at a point where it’s like, “We still need to move on. And either join us or we’re gonna keep on going and [do it without you].

So it was just difficult because they didn’t wanna come to the table, and basically we said, “Well, decisions are gonna be made and we’re moving forward. And you can either come and join and contribute, or you cannot and we’ll make the decisions.” So that has been difficult, but I think a lot of that’s just personality.

Empower the Group

I’ve turned it over to faculty. Step out of the way; let them take it. …Let them grow it the way they feel it should be grown for them…So much is based on trust.

Maintain Control of the Group

The high-level administrators have to go in the background…they have to learn to let go…when they did that, it worked; when they haven’t, it hasn’t been working.
Trust Those You've Empowered

I mean, I haven't always been real happy with everything they've done, but I've never been really disappointed in the end. I've been a little nervous about some of the directions that they've taken, but they've done a great job... I was a little worried what if they don't really mean that they are gonna get this done or what if they overload this term, and they don't have time to do it, and we don't make the deadline. But like I said, they've never disappointed me, so it worked out really well.

Invoke the Chain of Command for Accountability

I think the process is clearly delineated. It involves lots of people at lots of levels, and we've always tried to make it very clear that you're recommending, you're recommending, you're recommending, but the President decides. That has gone well.

We're going to hold them accountable to not only take this new idea we just found, but it's your job to come back to report to us what's happened with that initiative.

Maybe [someone at the top] needs to say, "This is now going to be this Vice President's or whoever's responsibility to oversee this, and a report needs to go back to that person so that we're sure what's happening is carried out because why did we do all that if it is not going to happen?"

References


RATIONALITIES & ROUTINES FOR PRACTICING EVIDENCE-BASED MANAGEMENT IN CONFLICTED STRATEGIC DECISION-MAKING GROUPS

ABSTRACT

Evidence-based management asserts that people will make better decisions that result in effective action when those decisions are based on rigorous and relevant scientific evidence. Yet, research in organizational decision-making indicates that 50% of decisions, regardless of their quality, will never be enacted. Apart from theoretical discussions and limited field reports, there has been no systematic empirical inquiry into how evidence-based management actually works to fasten decisions to committed action. This challenge is particularly daunting where decisions are made within a decentralized environment by shared leadership, an area also largely neglected in the evidence-based management literature. In a cross-sectional study we consider decision processes as enacted routines that are instrumental to support decision implementation within a complex environment where politics, power and conflict can trump substantive rationality. Our results show that in these environments, the use of evidence in group decision making may actually erode the commitment necessary for decision implementation. We also discover that routines of joint inquiry involving collaborative search for and analysis of evidence can be effective in bolstering commitment necessary for decision implementation. As such, our study identifies novel facilitative and restrictive conditions for implementing evidence-based management in complex decision environments.

Key Words: Evidence-based management, group decision, substantive rationality, procedural rationality, decision implementation
A wise sage once asked his young apprentice, “If three frogs are sitting on a log and two decide to jump off, how many frogs are left on the log?” The standard response is, “One.” One frog is left on the log because two jumped off. But in this response is a common, but mistaken, assumption. The correct answer to this deceptively simple riddle is, “Three.” Two decided to jump off but had not yet acted on that decision so all three remain on the log. The truth revealed in the riddle is that action does not automatically follow decision.

This riddle becomes an intriguing knoc in the study of evidence-based management (EBMgt). The foundational belief that decisions will be more effective when backed by rational evidence makes it relatively easy to take a seat on the log next to the frogs. That is, all too often we assume that people will be moved to effective action through simple presentation of a new truthful fact. Yet, there is an abundance of organizational research that indicates decisions- even the better ones- do not automatically lead to action (Laroche, 1995; Van de Ven & Sun, 2011).

There is also ample evidence that processes thought to promote rational decisions may actually negatively impact the commitment necessary to promote follow-through on implementation (Korsgaard et al., 1995). A qualitative study of decisions made by 356 managers in medium-to-large organizations found that 50% of decisions, regardless of their quality, were never enacted (Nutt, 1999). Half the time, those three frogs will remain on the log--time, resources, and expertise have been invested in reaching a decision that will never get implemented. In the days of accelerating rates of change, global competition and shifting resource dependencies (Hamel, 2007; Rynes et al., 2007) this is an unacceptable rate of return on investment. We must do better.

One reasonable explanation for such dismal return on this seemingly logical approach is complexity. Those frogs are floating in a pond of uncertainty and ambiguity.
where the boundaries of problems, solutions, and outcomes remain fluid while grounded in a turbulence of diverse interests, social norms and structures (March & Olsen, 1979; Mintzberg et al., 1976).

Under these conditions, information and formal analysis have the potential to create more muddle than clarity. All too often ‘evidence’ is brought to the table much like the Wonderland gardeners painting the white roses red to please the Queen of Hearts—what Weiss (1979) described as “grist for the mill” of whatever agenda is currently in play. Decisions often emerge through the interaction of interest, conflict and power where politics and persuasion trump reason (Elbanna, 2006).

The most recent definition of EBMgt takes these complexities into account and conceptualizes EBMgt as, “A knowledge-intensive, capacity-building way to think, act, organize, and lead that will develop better managers and lead to effective and adaptive organizations” (Rousseau, 2012: 3). From this perspective, the substantive quality of the decision rendered is but one consideration in the value of EBMgt. Building organizational capacity for effective action and adaptive organizational evolution are equally relevant concerns. And, importantly, it is identified as an activity done by practitioners, not scholars (Briner et al., 2009).

Yet, apart from theoretical discussions (Boudreau, 2012; Speicher-Bocija & Adams, 2012) and limited field reports (Kovner, 2012; Pfeffer & Sutton, 2006; Zanardelli, 2012), there has been almost no systematic empirical inquiry into how EBMgt actually works in practice to fasten decisions to commitment (Reay et al., 2009; Speicher-Boca & Adams, 2012; Van de Ven & Johnson, 2006). This paucity of research is particularly glaring where issues of power and conflict are concerned.
(Nutley, et al., 2007) and is equally conspicuous where decision-making takes place in
the presence of a plurality of actors in a decentralized structure (Jarzabkowski & Seidl,
2008; Johnson, et al., 2007; Yates & Potworowski, 2012). Findings from the decision-
making literature would suggest that these two contexts present a particular challenge
for enacting effective organizational decision-making (Van de Ven & Johnson, 2006).

Despite these challenges, EBMgt is on its way to becoming part of a common
organizational vernacular. The untethered exponential growth in its adoption across
multiple fields would seem to suggest its unequivocal benefit (Trinder & Reynolds,
2000). Yet, the fact remains there is much we don’t know. We don’t know if it works,
where it works, when it works, or how it works. Ironically, there is little rigorous
evidence to demonstrate that research evidence leads to better decisions or improved
organizational performance or under what conditions those benefits can be produced
(Reay et al., 2009; Speicher-Bocija & Adams, 2012; Tourish, 2012).

In this study, we propose some steps into that gap. We extend current models of
EBMgt by going beyond the assumptions of substantive rationality that suggest decision
quality by a single manager is improved when offered better evidence. We consider the
interactional decision process as enacted routines that are instrumental to support
decision implementation within a complex environment rife with political interests. We
propose that collaborative search for and analysis of evidence through a process of joint
inquiry will strengthen the commitment necessary to carry the decision through to
implementation. In addition, we propose that procedures of joint inquiry will facilitate
passive diffusion of EBMgt routines in subsequent decision making groups throughout
the organization. By empirically examining the actual routines of EBMgt in practice as
well as the impact of these routines on meaningful organizational outcomes, we can begin to shed light on the effectiveness of EBMgt in practice.

Specifically we ask, “Can the practice routines of EBMgt create the commitment necessary to carry the decision through to implementation?” Second, consistent with Feldman and Pentland’s (2003) view of routines as a source of both organizational stability and change, we further ask, “Can the performed routines of EBMgt inspire individuals to re-enact them in future decision groups so as to advance EBMgt throughout the organization?” Finally we inquire, “Can the presence of competing interests change these relationships?”

We analyze these questions through a cross-sectional survey that capitalizes on an opportunity provided by the introduction of a new accreditation process into the U.S. community college system. We study evidence-based collaborative decision-making in strategy groups within an institutionalized environment where groups primarily comprise scholars serving to govern their institution. Decision-making behaviors of 139 community college faculty, staff and administrators involved in accreditation committees across 13 colleges were examined along with their commitment to the emergent decision and behavior in subsequent committees. This particular setting is uncharacteristic of those studied thus far in that it is rich with elements identified in the literature to facilitate adoption of EBMgt and absent many of the identified barriers (Booth, 2011). As such, this setting presents intriguing possibilities for examining the practice of EBMgt in a relatively ideal setting thereby allowing some of the more complex elements to stand out (Goldkuhl, 2011).
Our results suggest that the collaborative search for and analysis of evidence was effective in bolstering the type of commitment necessary for decision implementation. We also find that the presence of evidence in group deliberations demonstrates its potential to influence individuals to modify their decision processes in future groups. As such, the effectiveness of EBMgt may include not only an increase in the effective implementation of the initiative at hand, but also an increase in the dynamic capabilities of the organization as individuals recreate these routines in the future. We also discovered that the use of evidence in settings characterized by contending logics of action between subgroups within the organization can actually erode commitment; yet, this was not the case when routines that rely on joint inquiry were utilized. As such, our evidence identifies novel facilitative and restrictive conditions for implementing EBMgt.

We begin with an examination of theoretical foundations for three key components of evidence-based management—ways of thinking, effective action, and adaptive organizational evolution. We introduce three different ‘ways of thinking’ about management and explore the implications of each for evidence-based management, particularly in contexts where decisions are made by a plurality of actors in a decentralized structure where politics and power play a central role. The discussion culminates in presentation of a research model to test the potential contributions of evidence-based management for use in decision making groups characterized by shared leadership and contending interests. After a review of the research methodology, sampling and analysis, we advance the discussion around
EBMgt based on our findings. We close with a brief consideration of the implications for organizational practice and future research.

**LITERATURE REVIEW**

**Effective Action and Adaptive Organizational Evolution**

The challenges of organizational decision making are two-fold. First, decisions must be made that accurately discern the risks, requirements and benefits of a problem or opportunity while taking into account available organizational resources and capabilities. Reasoning will thus reflect a *substantive rationality* that impacts perceived decision quality in terms of explanatory and predictive validity. Second, conditions must be created for coordinated action among diverse interests embedded within complex transactional relationships and contexts (Embirbayer, 1997; Follett, 1924). Reasoning from this perspective will reflect a *practical rationality* that impacts perceived decision quality in terms of cultivating commitment that moves people to effective action. It will also reflect a *political rationality* that impacts perceived decision quality in terms of negotiated value between competing interests. The challenge, then, is that decisions must be made and effective action must follow.

Commitment has been identified as key to the ultimate success of decision making (Dooley & Fryxell, 1999) and is defined as a belief in the decision’s contribution to quality (Nutt, 1998) and an attachment that “binds an individual to a course of action deemed necessary for the successful implementation of a change initiative (Herscovitch & Meyer, 2002; 475; Klein et al., 2009). Commitment precedes and motivates action to animate decisions (Drucker, 1955; Laroche, 1995). Without it, individuals are not only unlikely to persist in the behaviors necessary to implement
decisions, but also are more likely to engage in passive compliance or active undermining that can scuttle action (Guth & MacMillan, 1986; Korsgaard et al., 1995; Schwenk, 1989). Thus, cultivating commitment to the coordinated action necessary to implement decisions is crucial to effective organizational action.

Diffusion has been identified as key to organizational adaptability, particularly with regard to knowledge utilization (Green et al., 2009; Rogers, 2003). On a superficial level, diffusion may simply reflect the spread of a new idea or way of doing things that allows an organization to flexibly respond to changing demands. On a deeper level, however, diffusion represents a change in the structure and function of an organization necessary for adaptive evolution over time (Rogers, 2003; Thorpe et al., 2005). Emerging in this corpus of literature is an understanding that diffusion is generally not found in the features of the innovation, individuals or organization— the single pieces of the puzzle. Instead, diffusion is generally found in the spaces where people engage in the act of assembling the puzzle where complex interactions and contingencies can change the picture on the box from which one started. The life people breathe into new practices through reflexive adaptation in complex environments is what will move a practice throughout the organization (Greenhalgh et al, 2004; Lounsbury & Crumley, 2007; Page et al., 2008).

In the end, “Every decision of the manager is aimed at bringing about action by people” that supports both the stability of effective action and the flexibility of adaptive organizational evolution (Drucker, 1955: 120). But, herein lies a dilemma. A rational decision from the perspective of content may not be a rational decision from the perspective of action. Each challenge requires a different way of thinking and using
information. Hence, each challenge has implications for EBMgt. An integrated framework for the ensuing discussion is presented in Table 1.

**TABLE 1**

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### Ways of Thinking

#### Substantive Rationality

Substantive rationality is rich in the cognitive traditions that govern deductive logic (Townley, 2008). Information serves an instrumental purpose in providing principles to solve problems (Toulmin, 1958). EBMgt in its purest sense is a good fit with this way of thinking as it was born out of similar rationality. That is, an optimal answer to a relatively straight-forward technical problem can be deduced through convergence of scientifically-derived research findings. While not without its critics (Barzelay & Thompson, 2009; Learmonth & Harding, 2006; Morrell, 2008), the approach has been utilized with relative success in a variety of fields for nearly twenty years. The approach is appealing to the management field for its potential to reduce the gap between production and utilization of research so as to support informed and conscientious organizational decision making (Rousseau, 2006). Frameworks for implementation address a variety of elements likely to create conditions conducive for
research use including the nature of evidence, characteristics of individuals, and features of organizations (Aarons et al., 2011; Estabrooks et al., 2003; Innvaer et al., 2002; Meijers et al., 2006; Rycroft- Malone & Bucknall, 2010). Common to these frameworks is an underlying unarticulated assumption, to wit; EBMgt works with a high level of certainty—scientific knowledge will lead to better awareness that will improve decision quality that will ultimately lead to more effective actions. That is, ‘knowing’ will result in ‘doing.’

These frameworks have offered exceptional value for decision improvement when three essential conditions are met. First, the decision at hand involves a relatively straight-forward ‘technical’ or well-structured problem. Second, the ‘power of the evidence’ can be taken for granted based on cause-and-effect pairs that emerge from rigorous empirical investigation or systematic literature review. Third, the decision is made by a single individual in a relatively centralized authority and power structure. That is, the manager is an independent collector and repository of information and stakeholders are viewed as providers of information rather than collaborative actors who have investment in the decision (Potworowski & Green, 2012; Tourish, 2012).

By contrast, recent management literature places the burgeoning nexus for strategic decisions within a plurality of actors (Denis et al., 2013; Johnson et al, 2007; Lowendahl & Revang, 1998). In professional service firms, strategic decision-making takes place within decentralized structures of shared leadership that are distinctive in their mix of professional autonomy and diffuse authority (Denis et al., 2007; Jarzabkowski & Seidl, 2008; Kaiser & Ringlstetter, 2011). Similar arrangements are found in hospitals, colleges, cultural institutions and other pluralistic organizations
(Denis et al., 2007). These collaborative groups are faced with “large, expensive and precedent setting [choices] producing ambiguity about how to find a solution and uncertainty in the solution’s outcomes” (Nutt & Wilson, 2010: 4; Mintzberg et al., 1976). As such, decisions of these groups fall within the realm of strategic management (Morris et al., 2010) but have yet to be considered in models of EBMgt.

On the whole, management challenges tend to be steeped in uncertainty and ambiguity rather than well-structured problems (Mintzberg et al., 1976). The sequential deliberation of mathematic-like certainties characteristic of substantive rationality is often unsuited for these circumstances and thus a different way of thinking about decisions must be considered (Mintzberg et al., 1976; Townley, 2008). This brings us to the second challenge--creating conditions for coordinated action among diverse interests embedded within transactional relationships. Two types of rationality will likely be needed to address this challenge: 1) practical rationality to address coordinated action, and; (2) political rationality to address issues of interests and context.

**Practical Rationality**

*Practical rationality* invokes principles of inductive, rather than deductive, logic. Information is often used conceptually to shape feasible solutions that fit organizational dynamics and shape mindsets that induce action (Beyer & Trice, 1982; Weiss, 1976). Decisions are accomplished through the interaction of prior knowledge, expert information and contextual observations (Bazerman et al., 1983; Follett, 1924; Langley et al., 1995). As such, practical rationality captures one of the defining features of EBMgt--integration of professional expertise and judgment with the use of research evidence (Rousseau, 2012; Sackett et al., 1996). Practical rationality, by definition,
cannot exist in a vacuum. Moving people into action will require a keen understanding of motivations that animate their intentions. As such, we are moved quickly into our third way of thinking—political rationality—and will return to practical rationality when we later consider the routines of EBMgt in practice.

**Political Rationality**

Political rationality is less about principles of formal logic and more about the realities of power (Langley et al., 1995; Royer & Langley, 2008). Parallel to Allison’s (1969) classic model of bureaucratic politics, decisions emerge through the interplay of partisan agendas. Data and research are commonly valued more for purposes secondary to decisions and less for informing the actual content of decisions. Characteristic drivers for information use include asserting authoritative direction toward a predetermined solution and communicating institutional responsibility and legitimacy to stakeholders (Feldman & March, 1982; Weiss, 1976). EBMgt has yet to fully address these dynamics relying instead on the theoretical strength of science and systematic judgment to trump power and politics (Rousseau, 2012). However, this view is beginning to shift. The challenge of marrying substantive and political rationality in EBMgt is now openly acknowledged (Bartlett, 2011; Hodgkinson, 2012; Learmonth & Harding, 2006; Schwenk, 1989). While concrete recommendations for negotiating these waters have yet to be advanced, two practical strategies have been suggested: (1) including stakeholders in decision-making processes (Hodgkinson, 2012), and; (2) honing persuasive skills for argumentation around the evidence (Baughman et al., 2011). Herein, lies another dilemma.
These two strategies have the potential for both facilitative benefit and obstructive harm depending on the context where they are put into action.

Logics of Action

Institutional theorists have long known that the use of information and formal analysis are always embedded in the informal political structures and unspoken social norms within an organization (Langley 1989). Driving these tacit agreements are a set of animating philosophies, or ‘logics of action,’ that organize beliefs and behavior (Alford & Friedland, 1985; Bacharach et al., 1996; Thornton et al., 2012). These shared, but generally silent, scripts of motive and conduct can converge in collective identities that enable and constrain behavior within specific roles (Greenwood & Miller, 2010; Pache & Santos, 2010; Thornton & Ocasio, 2008). Thus, patterns of shared reasoning instantiated within individuals play out in specific practices within the interactional spaces where decisions are enacted (Townley, 2002). Contending logics of action between multiple professions typically found in health care settings have proven to be a challenge for implementation of evidence-based practices for this very reason (Ferlie et al., 2005).

Theoretically, such circumstances could be a boon to decision making. Lively inquiry between two (or more) logics of action has the potential for design of a decision that adopts the best of each side while avoiding the pitfalls of both (Weick, 2004). A decision that emerges after such intense scrutiny may actually be better than one that meets with easy agreement, may serve to build connections between “people who do not quite trust one another,” and may elicit commitment in the process (Langley, 1989: 609; Lindblom, 1990; Zarefsky, 2009). However, some have speculated that EBMgt may
prove to be a challenge in such contexts and could result in negative or unanticipated consequences (Bartlett, 2011; Briggs & McBeath, 2009; Potworowski & Green, 2012).

Empirical findings point to the potential for contending logics of action to dampen capacity for effective organizational action and adaptive evolution (Pache & Santos, 2010; Tourish, 2012). Decision-making arenas can become a platform for competing logics of action to jockey for power or assert authority (Brewer, 1981; Denis, et al., 2007; Follett, 1924).

Patterns of difference can be reinforced and reproduced in perpetuity restricting realization of mutually beneficial possibilities (Giddens, 1984; Swan et al., 2010; Thornton & Ocasio, 1999). Contending logics of action thus have the potential to create conflict in the organizational arenas where people must come together to make decisions—where the routines of decision making are ultimately enacted.

**Routines**

Routines have long been recognized as one way managers create conditions for coordinated action (Becker, 2004; Feldman & Rafaeli, 2002; Goldkuhl, 2011; Smets et al., 2012). Generally, they are conceptualized as “repetitive, recognizable patterns of interdependent actions, carried out by multiple actors” (Feldman & Pentland, 2003: 95). Specifically, they are conceptualized at two levels (Pentland & Feldman, 2005). ‘Ostensive routines’, much like substantive rationality, provide the basic essence of actions, or patterns of actions, much like a template to guide choices. They serve as a disembodied and disembedded template for action disconnected from specifics of time and place. Performative routines, much like practical and political rationality, represent the templates as they are embodied, embedded, and enacted in the temporally connected
day-to-day operations of an organization. They focus on actions (Pentland et al., 2012). Once understood only as a source of prescribed stability, routines are now recognized as mechanisms for organizational change through emergent adaptation (Feldman & Pentland, 2003; Page et al., 2008; Pentland et al., 2012). That said, these same dynamics make routines vulnerable to the forces of established path dependencies within an organization that can resist innovation (Becker, 2004).

In terms of EBMgt, prescribed routines for conducting systematic reviews and meta-analysis are rich in the substantive rationality that will create a wealth of quality information (Tranfield et al., 2003; Rousseau et al., 2008). However, there is far less clarity about performative routines for utilizing EBMgt in practice. Weick (2001) notes that people often gather information in response to uncertainty, but the more information they gather the more uncertain they feel. Weiss (1979) notes that streams of social science research are often more ‘divergent’ than ‘convergent’ and therefore hold the potential to confuse. Furthermore, in an environment of competing logics of action, EBMgt has the potential to create situations of ‘dueling data’ produced to enhance the appearance of authoritative ‘proof’ for a predetermined position. Yet, we know that ‘pushing’ evidence down the hierarchical ladder or amassing evidence to support the merits of a particular point of view alienates its acceptance by other stakeholders (Nutt, 1999; Page et al., 2008). In any of these scenarios, evidence has the potential to lead to a less rational decision than had there been no evidence at all (March & Olsen, 1979).

The question thus becomes, “What are the routines that allow for the thoughtful inductive selection of activity patterns by discerning professionals to remain
fluid and responsive to changing demands while remaining grounded within a recognizable and predictable structure of evidence-based management?”

Theorizing in this regard centers on political and practical rationality. Shown to be effective are ostensive routines that acknowledge the validity of contending logics while providing explicit and transparent performative routines allowing for discovery of common ground (Guth & MacMillan, 1986; Klein et al., 2009; March, 1987; Royer & Langley, 2008; Schwenk, 1989; Wooldridge & Floyd, 1990). Specific routines have been advanced with positive implications for both commitment and diffusion including deliberative dialogue (Culyer & Lomas, 2006; Dopson et al., 2002; Mitton, 2007), social construction of knowledge (Ferlie et al., 2005; Nutley, 2007), design science (van Aken & Romme, 2012), problem-finding and problem-solving (Nickerson et al., 2012) evidence-based organizing (Tourish, 2012) and transparent participatory inquiry (Hodgkinson, 2012; Huffman & Thomas, 2008: 348; Van Aken & Romme, 2012; Zaplin & Blohowiak, 2010).

Clearly, joint inquiry among practitioners can provide a “trading zone” of professional exchange (Kellogg et al., 2006) or routine of ‘truce’ if need be (Becker, 2005). Conflicting logics of action can each assert a valid viewpoint, contribute to unearthing evidence relevant to the decision at hand and find common points of alignment. Affordance of inquiry can serve as a routine to support the three key elements of EBMgt—conscientious, explicit and judicious use of evidence—within a context rife with contending interests (Potworowski & Green, 2012). The ultimate goal would be a routine encompassing a fair and transparent process allowing for mindful
collaborative selection of divergent streams of evidence engaging both inductive and
deductive reasoning while seeking alignment toward a common goal.

**RESEARCH MODEL AND HYPOTHESES DEVELOPMENT**

We next propose a model for EBMgt practice that captures all three rationalities to predict commitment to decisions and diffusion of routines in circumstances of shared leadership within a complex environment thick with contending interests. We propose that the collaborative search for and analysis of evidence is key to this process. Moreover, we propose that these routines of inquiry will be influenced by the contending logics of action in which they are embedded.

Consistent with recent calls in management literature for a focus on micro-processes, we study the activity of individuals in groups as routines of evidence-based management are enacted in practice (Goldkuhl, 2011; Johnson et al., 2007; Pentland et al., 2012; Scott, 2001; Smets et al., 2012). We advance that commitment and spontaneous recreation of routines are two outcomes clearly necessary for effective organizational action and adaptive evolution. The overall model is presented in Figure 1. We next outline the model constructs and related hypotheses.
Predictor Variables: Evidence-Based Management

Recent conceptualizations of EBMgt require four sources of information to be considered (Briner et al., 2009; Potworowski & Green, 2012). For the purposes of this study, we capture research evidence in our first variable of the same name. Practitioner expertise and judgment along with stakeholder perspectives are subsumed under ‘procedural rationality.’ Finally, information from the local context is represented in ‘logics of action.’

Evidence

For the purposes of this study, we delimit consideration of ‘evidence’ in terms of rigor and relevance as well as the motivation and purpose behind its introduction. Instead, we view evidence as a boundary object in the decision-making process (Hodgkinson, 2012; Spee & Jarzabkowski, 2009). The artifact of evidence becomes a
cooperative shared focus of attention rather than a directed solution to a specific problem which is often crucial when there is an absence of opinion consensus (Star, 2010). Consistent with principles of substantive rationality and foundations of EBMgt, we propose that the presence of evidence in these interactions will strengthen belief in the emerging decision and, hence, the commitment to follow-through with effective organizational action (Langley et al., 1995).

Hypothesis 1a. Evidence in the group decision-making process will increase individual commitment to the outcome.

Since the evidence serves as the boundary object for inquiry, it becomes a tangible artifact that can be easily introduced into other groups within the organization. Therefore we also propose that the presence of evidence in these interactions will strengthen individual behaviors to recreate the practice in subsequent groups throughout the organization.

Hypothesis 1b. Evidence in the group decision-making process will increase individual actions to recreate the practice in subsequent groups.

Procedural Rationality

We propose that routines guided by a blending of political and practical rationality—hereafter referred to as procedural rationality—can create conditions where competing logics of action can operate while seeking alignment toward a common goal (Cohen, 2007; Ferlie et al., 2001; Follett, 1924; Lindblom, 1990).

Engaging the spirit of political rationality would indicate the need for mechanisms that acknowledge the interactive complexity of equally valid competing logics and provide a sense of transparency and voice. Engaging the spirit of practical rationality would indicate the need for mechanisms that provide for integration and adaptation of
divergent findings to fit the current context of relationships and resources in the organization. Hence, procedural rationality—the collaborative search for and analysis of evidence—would introduce a new routine to EBMgt that will increase the effectiveness of decision making and the strength of commitment when contending logics of action are present (Dean & Sharfman, 1996; Langley, 1989; Lindblom, 1990; Mintzberg et al., 1976; Royer & Langley, 2008). As such, we propose:

**Hypothesis 2a.** Procedural rationality within the group decision-making process will increase individual commitment to the outcome.

The most meaningful animating force behind the diffusion of innovation and routines appears to be in the use itself. That is, new practices are carried through by the thoughtful selection and reflexive adaptation of activity patterns by discerning professionals in complex environments. As such, the interactive, interdependent and emergent nature of procedural rationality lends itself to passive diffusion.

**Hypothesis 2b.** Procedural rationality in the committee decision-making process will increase individual actions to recreate the practice in subsequent groups.

**Moderating Variable: Evidence in Combination with Procedural Rationality**

Some literature suggests that the combination of substantive and procedural rationality will lower confidence (Brunsson, 1982), create confusion (Langley, 1995), or even lead to paralysis (Schwartz, 2004). However, we believe that evidence use in these prior studies was more characteristic of tactical persuasion and as such would be subject to the negative influence of political pressure. Transparent joint inquiry apparent in routines of procedural rationality will support an appreciation for the validity of diverse viewpoints while seeking common ground for coordinated action (Cosier & Rechner, 1985; Mason & Mitroff, 1981; Potworowski & Green, 2012). As such, the inclusion of
procedural rationality will serve as a counter-measure to authority-wielding attempts to assert control often seen in highly political systems.

Hypothesis 3a. Evidence in combination with procedural rationality will amplify the impact on commitment as compared to either variable on its own.

Hypothesis 3b. Evidence in combination with procedural rationality will amplify the impact on individual actions to recreate the practice in subsequent groups as compared to either variable on its own.

Moderating Variable: Conflicting Logics of Action

The literature around EBMgt as well as routines and practice diffusion indicate the need to identify the contextual characteristics that can differentially impact effectiveness of innovations like EBMgt as performed. Since new routines of evidence-based management are over-laid atop established social norms and organizational structures, context becomes the moderating factor. However, these two layers likely operate in an interdependent fashion that will be difficult, if not impossible, to tease apart. That is, EBMgt introduces new routines that impact organizational dynamics yet these same dynamics hold the potential to influence how EBMgt is introduced. We test two theories of contingency to explore these relationships. First, two hypotheses are built on management classics that predict evidence will be held suspect when introduced into environments steeped in conflicting logics of action (Feldman & March, 1981; Weiss, 1979). Both commitment and recreation of practice would be dampened as a result.

Second, two hypotheses are built on prescriptions for the transparency of procedural rationality in conflicted environments. Both commitment and recreation of
the practice would be amplified as logics of action become aligned toward a common

Hypothesis 4a. Conflicting logics within the professional practice context will dampen the impact of evidence on commitment to the outcome.

Hypothesis 4b. Conflicting logics within the professional practice context will dampen the impact of evidence on individual actions to recreate the practice in subsequent groups.

Hypothesis 4c. Conflicting logics within the professional practice context will amplify the impact of procedural rationality on commitment to the outcome.

Hypothesis 4d. Conflicting logics within the professional practice context will amplify the impact of procedural rationality on individual actions to recreate the practice in subsequent groups.

RESEARCH DESIGN

The aim of the present study is to test a theoretical model suggested in figure 1 within an institutionalized political environment using a cross-sectional, self-administered survey-based quantitative study. This method allows query of a sufficient sample from multiple institutions at a single-point in time and permits sophisticated statistical analysis that can then be generalized to other populations.

Construct Operationalization

Consistent with recommendations for using measures with strong reliability when testing for interactions (Cohen et al., 2003; Whisman & McClelland, 2005), the majority of items were selected from well-established scales with proven reliabilities of .90 or greater. A pool of 31 items across seven constructs was then piloted in accordance with procedures outlined by DeVellis (2003) and Bolton (1993). The definition of constructs and their reliability are described below.
‘Commitment’ included the 6-items from Herscovitch & Meyer’s (2002: 475) “Affective Commitment to Change” 7-point Likert scale with a reliability of .94 designed to measure a strong belief in the benefits of the change that “binds an individual to a course of action deemed necessary for the successful implementation of a change initiative.”

‘Re-Creation of Practice’ included 5-items adapted from the 10-item 7-point Likert scale with .93 reliability developed by Morrison and Phelps (1999) to measure an individual’s utilization of sanctioned techniques with the intent to improve practices within an organization. Specifically, the construct is defined as the “voluntary and constructive efforts by individual employees to effect organizationally functional change with respect to how work is executed within the contexts of their jobs, work units, or organizations” (Morrison & Phelps, 1999: 403).

‘Evidence’ reflects the extent to which specific types of information were gathered to assist in the decision-making process and includes: benchmarking, best practices, empirical research from peer-reviewed journals, information from professional association publications or funding sources as well as econometric data collected by institutional research staff. Items were developed specifically for this study based on findings from a previous qualitative study conducted by the authors. Items were rated on a 5-point Likert scale with a demonstrated reliability of .90.

‘Procedural Rationality’ was measured with 4 of 5-items on a 5-point Likert scale of the same name developed by Dean and Sharfman (1993: 589) to measure “the extent to which the decision process involves the collection of information relevant to
the decision and the reliance upon analysis of this information in making the choice”.

The scale has an identified reliability of .80.

‘Conflicting Logics of Action’ included 8-items on a 5-point Likert scale derived from a measure by Angle & Perry (1986) to capture labor-management relations climate; the focus was adjusted to reflect faculty-administrative relationships. Reliability ranged from .92-.95 for managers and labor leaders, respectively.

Control Variables

Organization Size

To meet the substantial demands of accreditation, professionals at smaller colleges often serve on multiple project committees potentially limiting time to search, examine, and analyze relevant empirical research and statistical data. Information for this demographic item was based on state reported enrollment levels for each institution.

Organization Time

Institutions with more years in the quality improvement accreditation system may be further along in creating a ‘quality culture’ that values evidence and more skilled in the application of evidence-based management principles. Information for this demographic item was based on inception dates of college involvement in the accreditation model as listed on the accreditation web-site.

The Setting

The study setting capitalizes on an opportunity provided by the introduction of a new accreditation process into the U.S. community college system as a way of supporting educational reform. While this academic quality improvement process is not described by the accrediting body as an evidence-based approach per se, it does
incorporate the characteristics of “evidence-informed” practices (CHSRF, 2005; Davies et al., 2000; Nutley et al., 2007). In addition, the collaborative decision process of the academic shared governance system is characteristic of institutionalized pluralistic organizations that are distinctive in their mix of professional autonomy and diffuse authority (Jarzabkowski & Seidl, 2008; Mintzberg, 1980). These committees are involved in making key decisions about the strategies that accomplish major accreditation goals. As such, the committee charge is consistent with conceptualizations of strategic decision-making in organizations discussed above.

EBMgt appears to be an easy ‘fit’ with our population (Ansari et al, 2010). Uncharacteristic of settings studied thus far, our setting is rich with elements identified in the literature to facilitate adoption of EBMgt and absent many of the identified barriers (Booth, 2011). These committees are comprised of highly educated individuals who have chosen to work in the knowledge-intensive field of higher education where critical inquiry around ‘fact’ and the ‘nature of knowing’ are part and parcel of their daily routines (Dill, 1982). They are skilled in essential EBMgt skills frequently absent in other study samples thus far. These skills include seeking, evaluating and using various types of information, including empirical research. Likewise, unlike many of the organizations in the EBMgt literature thus far, colleges in our sample have open access to academic research databases and various levels of institutional research capabilities. All these elements have been shown to be correlated with utilizing evidence in decision-making practice (Buss & Shillabeer, 2011; McWilliam et al., 2008). As such, this setting presents intriguing possibilities for examining the practice of EBMgt in a relatively ideal setting.
thereby allowing some of the more complex elements to stand out (Goldkuhl, 2011) and providing the potential to expand the scope of theory in this area.

In terms of conflicting logics of action, divisions between faculty and administration within higher education appear to be the norm. While academia has its roots in the values of “intellectual creativity”, “reasoned inquiry” and “tolerance of diverse ideas and experiences” within the classroom (Axelrod, 2002: 34-5, 37), numerous authors have observed that these same values do not seem to extend into the management of these institutions (Kezar, 2004; Lee, 1991; Mortimer & O’Brien-Sathre, 2007; Ruben, 2004). In addition to differences in roles and reward structures (Del Favero, 2003), numerous polarities characterizing the faculty-administration divide have received comment including academic versus administrative (Conway, 1998), mission-centered versus market-smart (Zemsky et al., 2005), autonomy versus authority (Awbrey, 2007), and collegial versus bureaucratic (Swenk, 1999). Based on a review of the governance literature, Del Favero & Bray (2005) conclude, “A permanent state of tension and conflict mark these relationships” and “represent at best an uncomfortable alliance.” As such, these entrenched subgroup differences provide a context thick with competing logics of action that hold the potential to instantiate the “jointly extreme observations crucial for detecting interactions” (McClelland & Judd, 1993: 382; Cohen et al., 2003).

Sample and Data Collection

The sample for this study was drawn from community-colleges in a mid-western state participating in a new accreditation system utilizing a quality improvement model. Participation in this new system reflected their status as an institution with an established commitment to quality improvement practices as well as a proven record of
accreditation compliance. In all, the fifteen community colleges in one mid-western
state listed on the accrediting board’s web-site were contacted and invited to participate.
The Provosts at each college were asked to provide the comprehensive membership
rosters for the accreditation committees over the past five years and survey links were
directly e-mailed to college personnel by the primary researcher. Two colleges were
dropped from the sample—one recently experienced a radical change in administrative
leadership and declined to participate; the other was dropped due to potential conflict of
interest as one of the researchers was affiliated with the college.

Six-hundred-fifty-three surveys were sent out, 242 were started and 189 were
returned. The survey’s relatively long average completion time (25 minutes) may
account for those who started the survey but discontinued after completing a significant
portion and never returned despite two follow-up reminders. Of those that were
returned, fifty cases were dropped as they were curiously discontinued within the first
several questions that established how they became involved in the accreditation
committee. These cases occurred across 8 of the 13 schools (of various size and
geographical location) and were likely a function of the requested five year window of
committee participants.
### TABLE 2
Demographic Profile of Respondents

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Role</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty</td>
<td>46</td>
<td>33.6%</td>
</tr>
<tr>
<td>Staff</td>
<td>20</td>
<td>14.6%</td>
</tr>
<tr>
<td>Mid-Management</td>
<td>24</td>
<td>17.5%</td>
</tr>
<tr>
<td>Management</td>
<td>47</td>
<td>34.3%</td>
</tr>
<tr>
<td>Administrative</td>
<td>2</td>
<td>1.4%</td>
</tr>
<tr>
<td><strong>Faculty</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-Time</td>
<td>42</td>
<td>30.2%</td>
</tr>
<tr>
<td>Time</td>
<td>4</td>
<td>2.9%</td>
</tr>
<tr>
<td>Part-Time</td>
<td>93</td>
<td>66.9%</td>
</tr>
<tr>
<td>Unidentified Status</td>
<td>25</td>
<td>18.0%</td>
</tr>
<tr>
<td>Tenured</td>
<td>19</td>
<td>13.7%</td>
</tr>
<tr>
<td>Not Tenured</td>
<td>95</td>
<td>68.3%</td>
</tr>
<tr>
<td>Unidentified Tenure Status</td>
<td>16</td>
<td>11.5%</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>92</td>
<td>66.2%</td>
</tr>
<tr>
<td>Male</td>
<td>42</td>
<td>31.3%</td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some High School</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>GED</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>High School Diploma</td>
<td>1</td>
<td>0.70%</td>
</tr>
<tr>
<td>Technical Certificate</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Associate’s Degree</td>
<td>7</td>
<td>5%</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>18</td>
<td>12.9%</td>
</tr>
<tr>
<td>Master’s Degree</td>
<td>72</td>
<td>51.8%</td>
</tr>
<tr>
<td>Doctorate</td>
<td>36</td>
<td>25.9%</td>
</tr>
<tr>
<td>Post-Doctorate</td>
<td>2</td>
<td>1.4%</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>26-35</td>
<td>10</td>
<td>7.2%</td>
</tr>
<tr>
<td>36-45</td>
<td>25</td>
<td>18.0%</td>
</tr>
<tr>
<td>46-55</td>
<td>50</td>
<td>36.0%</td>
</tr>
<tr>
<td>56-65</td>
<td>43</td>
<td>30.9%</td>
</tr>
<tr>
<td>66-75</td>
<td>4</td>
<td>2.9%</td>
</tr>
<tr>
<td><strong>Length of Time in Higher Education Field</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5 Years</td>
<td>18</td>
<td>12.9%</td>
</tr>
<tr>
<td>6-10 Years</td>
<td>25</td>
<td>18.0%</td>
</tr>
<tr>
<td>11-15 Years</td>
<td>25</td>
<td>18.0%</td>
</tr>
<tr>
<td><strong>Length of Time at Present College</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5 Years</td>
<td>31</td>
<td>22.3%</td>
</tr>
<tr>
<td>6-10 Years</td>
<td>38</td>
<td>27.3%</td>
</tr>
<tr>
<td>11-15 Years</td>
<td>25</td>
<td>18.0%</td>
</tr>
</tbody>
</table>

\(^1\) Potworowski & Green (2012)
The final sample reflected a 23% response rate and consisted of 139 faculty, staff and administrators from academic quality improvement committees across 13 public community colleges in a mid-western state participating in a quality improvement accreditation system. Sample characteristics are summarized in Tables 2 and 3. There was an essentially equal number of respondents from colleges of various size (small, medium and large based on enrollment numbers) and from colleges with various amounts of longevity in the new accreditation process (4 to 10 years). Consistent with the average committee compositions, one-third of respondents were faculty (91% full-time and 56% of these tenured; 12% collective bargaining members) while 14% were staff, 17% mid-management, and 34% administrative. Just over half of respondents had earned a Master’s Degree (51.8%) and just over a quarter had earned a Doctorate (27.3%).

### TABLE 3
Committee Involvement of Respondents

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How Selected for Committee</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volunteered</td>
<td>40</td>
<td>28.8%</td>
</tr>
<tr>
<td>Selected by Provost, Vice President, or Dean</td>
<td>52</td>
<td>37.4%</td>
</tr>
<tr>
<td>Selected by Supervisor or Department</td>
<td>8</td>
<td>5.8%</td>
</tr>
<tr>
<td>Chair Selected by Faculty Senate</td>
<td>1</td>
<td>0.7%</td>
</tr>
<tr>
<td>By Virtue of Being a Faculty Senate Member</td>
<td>1</td>
<td>0.7%</td>
</tr>
<tr>
<td>By Virtue of Being Collective Bargaining</td>
<td>1</td>
<td>0.7%</td>
</tr>
<tr>
<td>By Virtue of Job Function at the College</td>
<td>34</td>
<td>24.8%</td>
</tr>
<tr>
<td><strong>Length of Time on Committee</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 Year</td>
<td>12</td>
<td>10.1%</td>
</tr>
<tr>
<td>1 Academic Year</td>
<td>12</td>
<td>8.6%</td>
</tr>
<tr>
<td>2 Academic Years</td>
<td>26</td>
<td>18.7%</td>
</tr>
<tr>
<td>3 Academic Years</td>
<td>39</td>
<td>28.1%</td>
</tr>
<tr>
<td>4 Academic Years</td>
<td>47</td>
<td>33.8%</td>
</tr>
<tr>
<td><strong>Participation in Committee (on a 5 point scale where 0 = Never)</strong></td>
<td>(Mean)</td>
<td></td>
</tr>
<tr>
<td>Attend committee</td>
<td>4.54</td>
<td></td>
</tr>
<tr>
<td>meetings Active role in discussions</td>
<td>4.57</td>
<td></td>
</tr>
<tr>
<td>Complete committee tasks between meetings</td>
<td>4.40</td>
<td></td>
</tr>
<tr>
<td>meetings Review materials prior to meetings</td>
<td>4.15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.88</td>
<td></td>
</tr>
</tbody>
</table>
THE MEASUREMENT MODEL

Exploratory Factor Analysis

Data was systematic screened according to accepted principles covering missing, multivariate homogeneity of variance, multicollinearity or linearity (Hair et al., 2010). No major challenges were observed. EFA was conducted using principle axis factoring with a Promax oblique rotation using PASW version 18.0., resulting in the deletion of 11 items that exhibited unacceptable patterns of skewness or kurtosis, or failed to demonstrate clear loading patterns.

Of note were some minor cross-loads and splitting of the “Evidence” construct into two factors: (a) objective data/research external to the institution and (b) data/research specific to the institution. Given the more econometric and internal nature of data in the second factor it was dropped from the current analysis in favor of data/research from external sources that is more consistent with the idea of EBMgt. The final EFA model revealed the presence of 5 components with eigenvalues exceeding 1.0 explaining 75.41% of the variance. Good overall internal consistency was confirmed with a Cronbach’s alpha of .791.
Confirmatory Factor Analysis

A confirmatory factor analysis was conducted in AMOS (18) to confirm the identified factor structure (Byrne, 2010). The final model contained 20 items within 7 factors meeting the three indicator rule for all but the two demographic constructs (Organization Size and Organization Time) as reflected in Appendix A.

Construct Evaluation

Factor loadings were strong, uniform, and significant patterned on their expected factors with .89 loading as referenced in Table 4. Composite reliabilities were above the recommended threshold of .7 (ranging from .85 to 1.0). The Average Variance Extracted (AVE) met or exceeded the threshold of .5 (ranging from .60 to 1.0) for most constructs demonstrating Convergent Validity. Variance shared among the construct and its respective items was greater than the average or maximum variance shared with any other construct demonstrating discriminant validity (Podsakoff & MacKenzie, 1994). Two noteworthy small violations could be noted. Procedural Rationality demonstrated a weak-to-moderate correlation with Commitment (.405). However, these two constructs tap into two distinct points in time with Commitment following Procedural Rationality. Procedural Rationality also demonstrated a weak-to-moderate correlation with Evidence (.519). This relationship was somewhat predictable given that both occur simultaneously with one representing an “artifact” (Evidence) and the other representing the interactive inquiry around the artifact (Procedural Rationality). Neither of these inter-correlations mounted a threat to discriminant validity (Hair et al, 2010). Descriptive statistics and inter-correlations are depicted in Table 5 and final construct definitions and items are listed in Appendix A.
### TABLE 4
Factor Loadings and Measurement Properties of Constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Loading</th>
<th>t-Value</th>
<th>Variance Extracted</th>
<th>Highest R²</th>
<th>Average R²</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence EM1 EM2 EM3 EM4 EM5</td>
<td>.694</td>
<td>--</td>
<td>7.538</td>
<td>.738</td>
<td>.851</td>
<td>.64</td>
</tr>
<tr>
<td></td>
<td>.686</td>
<td>--</td>
<td>9.896</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.922</td>
<td>--</td>
<td>9.720</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.902</td>
<td>--</td>
<td>8.431</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.773</td>
<td>--</td>
<td>7.538</td>
<td>.738</td>
<td>.851</td>
<td>.64</td>
</tr>
<tr>
<td>Procedural Rationality PR1 PR2 PR3 PR4</td>
<td>.731</td>
<td>--</td>
<td>8.053</td>
<td>.329</td>
<td>.746</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>.864</td>
<td>--</td>
<td>8.389</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.759</td>
<td>--</td>
<td>9.384</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.725</td>
<td>--</td>
<td>8.053</td>
<td>.329</td>
<td>.746</td>
<td>.60</td>
</tr>
<tr>
<td>Commitment AC3 AC5 AC6</td>
<td>.789</td>
<td>--</td>
<td>8.671</td>
<td>.741</td>
<td>.742</td>
<td>.64</td>
</tr>
<tr>
<td></td>
<td>.752</td>
<td>--</td>
<td>9.308</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.861</td>
<td>--</td>
<td>9.308</td>
<td>.741</td>
<td>.742</td>
<td>.64</td>
</tr>
<tr>
<td>Recreation of Routine TC1 TC2 TC4</td>
<td>.787</td>
<td>--</td>
<td>10.286</td>
<td>.832</td>
<td>.859</td>
<td>.69</td>
</tr>
<tr>
<td></td>
<td>.927</td>
<td>--</td>
<td>9.505</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.772</td>
<td>--</td>
<td>9.505</td>
<td>.832</td>
<td>.859</td>
<td>.69</td>
</tr>
<tr>
<td>Conflicting Logics of Action FA1 FA2 FA8</td>
<td>.841</td>
<td>--</td>
<td>11.490</td>
<td>.735</td>
<td>.761</td>
<td>.72</td>
</tr>
<tr>
<td></td>
<td>.872</td>
<td>--</td>
<td>11.092</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.836</td>
<td>--</td>
<td>11.092</td>
<td>.735</td>
<td>.761</td>
<td>.72</td>
</tr>
</tbody>
</table>

**Model Fit**

All Goodness of Fit thresholds were met indicating a strong model (Chi-square 189.521, df = 151, p = .018); CMIN/df 1.255; CFI .971; RMSEA .043 (.019 to .061) with PCLOSE .718).

The solution explained 75% of the variance exceeding the recommended 60% threshold. Two dependent variables accounted for 20.623% of the variance, two independent variables for 37.826% of the variance, one moderator for 10.648%, and two controls for 6.162%.
### TABLE 5
Descriptive Statistics and Item Inter-Correlations

<table>
<thead>
<tr>
<th>Factor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Mean</th>
<th>SD</th>
<th>CR</th>
<th>AVE</th>
<th>MSV</th>
<th>ASV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procedural</td>
<td>.519</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rationality</td>
<td>.519</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commitment</td>
<td>.049</td>
<td>.404</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recreation</td>
<td>.157</td>
<td>.126</td>
<td>.045</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logics</td>
<td>.245</td>
<td>.222</td>
<td>.080</td>
<td>.024</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>-.017</td>
<td>-.162</td>
<td>.066</td>
<td>-.012</td>
<td>-.120</td>
<td>1.00</td>
<td>na</td>
<td>na</td>
<td>.84</td>
<td>.64</td>
<td>.00</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>.099</td>
<td>.099</td>
<td>-.069</td>
<td>-.163</td>
<td>.015</td>
<td>-.367</td>
<td>1.00</td>
<td>na</td>
<td>na</td>
<td>1.0</td>
<td>1.0</td>
<td>.02</td>
<td>.01</td>
</tr>
</tbody>
</table>

**Common Method Variance (CMV)**

The threat of CMV was reduced by incorporating different numerical rankings and anchor descriptions in survey questions (Doty & Glick, 1998). Harmon’s Single Factor Test (Podsakoff et al., 2003) and use of unobserved latent construct (Richardson et al., 2009) suggested no threat of significant non-congeneric common method variance. A one factor model was insufficient for variance explanation and CMV path coefficients of .133 indicated a common method bias of 2%, which is well below the average observed in the field of organizational research (Doty & Glick, 1998).

**THE STRUCTURAL MODEL**

Maximum Likelihood Estimation was used allowing exogenous variables to co-vary (Hair et al., 2010). Non-significant paths were trimmed in a step-wise fashion (Byrne, 2010).

Consistent with Becker (2005), the controls were treated like other independent variables. Two Interaction terms were created from the standardized construct values to explore the combined impact of ‘Conflicting Logics of Action’ with each of the dependent variables (Evidence, Procedural Rationality). A third interaction term was created from standardized construct values to explore the combined impact of Evidence
and Procedural Rationality on each of the dependent variables. Each interaction term was tested separately; standardized scores for independent, dependent, and control variables were entered into the model with all paths restored. While Chi-square difference tests conducted between respective versions of the model were insignificant, the significant interactions were retained for their potential contributions to theory development. All recommended Goodness of Fit thresholds were met in the final structural model indicating a strong model (Chi-Square 3.458, df 4, p = .484; CMIN/df .864; CFI 1.00; RMSEA .00 (Lo .000, Hi .121), PCLOSE .642). The final model is depicted in Figure 2.

**FIGURE 2**
Structural Equation Model

![Structural Equation Model Diagram](image)

**FINDINGS**

**Direct Effects**

Overall, we tested ten hypotheses—four direct effects and six moderating effects. Two direct effects and two moderating effects were supported (Table 6).
**Hypothesis (1a)** was not supported. While the relationship was significant, it was in the opposite direction than hypothesized. The use of evidence within the group decision making process decreased commitment to the decision ($\beta = -.183$, $p = .046$).

**Hypothesis (1b)** was supported in that the use of evidence within the group decision making process increased willingness to introduce procedural changes in subsequent groups ($\beta = .218$, $p = .027$). Next, **Hypothesis (2a)** was supported in that the collective search for and analysis of evidence within the group decision making process increased commitment to the decision ($\beta = .473$, $p = .001$). However, no support was offered for **Hypothesis (2b)** regarding the direct relationship of ‘Procedural Rationality’ to ‘Recreation of Practice’ ($\beta = -.017$, $p = .863$).

### TABLE 6
Hypotheses Testing -- Direct Relationships & Interactions

<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLE</th>
<th>RELATIONSHIP</th>
<th>DEPENDENT VARIABLE</th>
<th>Support</th>
<th>Est.</th>
<th>p-value</th>
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<tbody>
<tr>
<td>1a Evidence</td>
<td>Increases</td>
<td>Commitment</td>
<td>No</td>
<td>-.183</td>
<td>.046</td>
</tr>
<tr>
<td>1b Evidence</td>
<td>Increases</td>
<td>Recreation of Practice</td>
<td>Yes</td>
<td>.218</td>
<td>.027</td>
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<tr>
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<td>Increases</td>
<td>Commitment</td>
<td>Yes</td>
<td>.473</td>
<td>.001</td>
</tr>
<tr>
<td>2b Procedural Rationality</td>
<td>Increases</td>
<td>Recreation of Practice</td>
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<td>.863</td>
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<tr>
<td>3a Evidence * Procedural Rationality</td>
<td>Amplify</td>
<td>Commitment</td>
<td>No</td>
<td>.080</td>
<td>.379</td>
</tr>
<tr>
<td>3b Evidence * Procedural Rationality</td>
<td>Amplify</td>
<td>Recreation of Practice</td>
<td>Partial</td>
<td>-.204</td>
<td>.021</td>
</tr>
<tr>
<td>4a Evidence * Conflicting Logics of Action</td>
<td>Dampens</td>
<td>Commitment</td>
<td>Partial</td>
<td>.208</td>
<td>.011</td>
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<tr>
<td>4b Evidence * Conflicting Logics of Action</td>
<td>Dampens</td>
<td>Recreation of Practice</td>
<td>No</td>
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<td>.067</td>
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<td>4c Procedural Rationality * Conflicting Logics of Action</td>
<td>Amplifies</td>
<td>Commitment</td>
<td>No</td>
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<td>.657</td>
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<tr>
<td>4d Procedural Rationality * Conflicting Logics of Action</td>
<td>Amplifies</td>
<td>Recreation of Practice</td>
<td>No</td>
<td>.061</td>
<td>.555</td>
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**Moderated Effects**

**Hypothesis (3b)** was partially supported in that the combined influence of evidence with collaborative search and analysis interact significantly with ‘Recreation
of Practice’ ($\beta = -.204, p = .021$). However, the relationship between the constructs was more complex than predicted as displayed in the interaction plot (Figure 4). First, the highest levels of practice recreation occur when evidence use is high and procedural rationality is low. Second, the lowest levels of practice recreation takes place when both evidence use and procedural rationality are low. Third, in group decision-making scenarios with high procedural rationality, high evidence use dampens practice recreation.

**FIGURE 3**
Evidence*Procedural Rationality DV = Recreation of Practice

**FIGURE 4**
Evidence*Contending Logics DV = Commitment
We find that **Hypothesis (4a)** was partially supported in that the influence of evidence on commitment varies significantly depending on the nature of ‘Conflicting Logics of Action’ ($\beta = .203$, $p = .011$). However, the relationship is more complex than predicted as displayed in Figure 5. Where when logics of action are aligned (low conflicted logics), the introduction of evidence into the group process *strengthens* commitment to the emerging decision. Where logics of action are not aligned, the introduction of evidence into the group process significantly *erodes* commitment to the decision. Further, when the introduction of evidence into group processes is low, commitment to the decision is *higher* in environments of conflicting logics of action when compared to environments where logics of action are aligned. When the introduction of evidence into group processes is high, commitment to the decision is *higher* in environments where logics of action are aligned when compared to environments with conflicted logics of action. The highest levels of commitment occur with low evidence use in situations of conflicting logics of action or with high evidence use in situations where logics of action are aligned. The lowest levels of commitment occur with high evidence use in situations of conflicting logics of action.

The remaining four moderation hypotheses were not supported. The combination of ‘Evidence’ and ‘Procedural Rationality’ did not amplify commitment (H3a: $\beta = .080$, $p = .379$). ‘Conflicting Logics of Action’ did not dampen the impact of ‘Evidence’ on ‘Recreation of Practice’ (H4b: $\beta = .119$, $p = .067$). Nor did ‘Conflicting Logics of Action’ amplify ‘Procedural Rationality’ on ‘Commitment’ (H4c: $\beta = .044$, $p = .657$) or ‘Recreation of Practice’ (H4d: $\beta = .061$, $p = .555$).
DISCUSSION

As our paper draws to a close, we rejoin our three frogs on the proverbial log and ask, “How many are left on the log?” Was the substantive rationality of the decision sufficient to induce effective action and adaptive evolution? Or was more needed?

We set out to extend current models of EBMgt beyond the substantive rationality of decision quality by a single manager. To this end, we offered several arguments. First, effective decisions must not only result in substantively rational beliefs but also cultivate commitment for coordinated action among diverse interests. Second, building capacity for effective action and adaptive organizational evolution requires more than one way to think about the value of evidence in the decision-making process. Third, interactional decision processes as enacted routines are instrumental to support decision implementation and passive diffusion of these routines within a complex pluralistic environment with decentralized authority. Last, EBMgt can be a vehicle to serve all these purposes.

We advanced ten hypotheses while only four were substantiated. At first glance, this may appear to be a poor showing. Nevertheless, given the absence of prior empirical studies on the effectiveness of EBMgt and the conflicting theories about information use in decision making, four significant findings are exciting and informative in this new territory. Taken together, these findings suggest that evidence and procedural rationality are equally, but differentially, important to the effectiveness of EBMgt.

Consistent with the spirit and foundation of EBMgt, we hypothesized that evidence in the decision-making process would strengthen commitment to the decision,
and hence action to follow-through on effective implementation. We discovered this was not the case; the presence of evidence actually eroded commitment (H1a: $\beta = -0.183$, $p < 0.046$). Given that evidence is the backbone of EBMgt, this is a substantial finding and one that merits careful consideration.

From a theoretical point of view, it could appear that evidence opened the door to uncertainty by way of too much information (Brunnson, 1982) creating confusion that subsequently reduced commitment. However, descriptive statistics for items in the evidence construct reflect a relative paucity of evidence use. Evidence from research journals, professional associations and funding sources was utilized less than half the time. Benchmarking and best practices from the accreditation web-site were consulted, on average, more than ‘half the time’ but less than ‘frequently.’ This hardly paints the picture of information overload.

Equally plausible is the possibility that evidence could have shut the door on opposing opinion by way of tactical authority (Feldman & March, 1981; Langley, 1995) generating passive compliance that subsequently reduced commitment. Knowing more about the intent behind the introduction of evidence and the perception of how it was received might shed some light on this conjecture. This study’s conceptualization of evidence in the neutral terms of a boundary object precludes such specific consideration. However, descriptive statistics for the items in the procedural rationality construct indicate that committees, as a collective body with both logics of action represented, searched for and analyzed evidence more than ‘frequently’ but less than ‘almost always.’ This pattern of collective search for evidence would seem contrary to theories
of authoritarian control where evidence is brought to the table to support a predetermined position.

The most accurate explanation, however, is tied to research design. Interactional models, such as the design of this study, capture relationships that are qualitatively different from relationships in strictly linear models (Aiken & West, 1991; Cohen et al., 2003; Hayes et al., 2011; Jaccard & Turrisi, 2003). Linear models demonstrate global effects—the constant effects of a predictor variable across all values of an outcome variable (i.e., first-order effects). When interaction is introduced to the model, first-order effects become dependent on the supplementary predictor variable (i.e., moderator) in the interaction term (i.e., conditional effects). A significant interaction indicates effects are unequal across levels of the moderator.

Interpretations of first-order effects apart from the influence of the accompanying second predictor variable thus become inaccurate. Moreover, in the case of disordinal interactions (i.e., crossover) where effects are unequal across levels of the moderator and move in different directions, first-order effects become confounded (Hair et al., 2010). Interpretations must be advanced more locally within the conditional context of the model. As such, we abdicate our initial speculation and turn our attention to the intricate relationships surrounding the interaction of evidence, procedural rationality, commitment and recreation of practices in contexts where conflicting logics of action are in operation.

The strongest relationship within these contexts was the increased commitment associated with procedural rationality (H2a: β = .473, p < .001). Interestingly, though, despite the success of increased commitment, procedural rationality was not introduced
into subsequent committees (H2b: $\beta = -.017$, $p < .863$). An apparently successful strategy was not repeated. Evidence, however, demonstrated the exact opposite pattern of relationships. Rather than increasing commitment as hypothesized, the presence of evidence significantly decreased the commitment necessary for decision implementation (H1a: $\beta = -.183$, $p < .046$). Interestingly, despite the erosion of commitment, evidence was introduced into subsequent committees (H1b: $\beta = .218$, $p < .027$). An apparently ineffective strategy was repeated. This pattern of findings would certainly present a curious picture apart from the political rationalities thick in the context of conflicted logics so it is to these considerations we move next.

We discovered that within a context where logics of action are aligned, the introduction of evidence into decision making strengthens commitment to the outcome. In contrast, we also discovered that within a context where logics of action are not in alignment, the introduction of evidence into decision making erodes commitment. Yet, regardless of this increase or decrease in commitment (H4a: $\beta = .208$, $p < .011$), these same practices are likely to be re-enacted in subsequent groups (H1b: $\beta = .218$, $p < .027$). This is a somewhat paradoxical finding. Why would an educated professional recreate a process that is likely to repeatedly reduce success of organizational endeavors? One might consider the possibility of some sort of passive-aggressive behavior to sabotage organizational projects except that more than 50% of these professionals either volunteered or served as a function of their role at the college. Given the considerable time obligations involved, unless some kind of sociopathic virus is running rampant on the campuses, it seems prudent to set this thought aside. There is another reasonable possibility.
Reminiscent of the classic papers on research utilization and formal analysis in organizations (Beyer & Trice, 1982; Feldman & March, 1982; Langley, 1989; Weiss, 1979), perhaps the answer lies in the motives for introducing evidence in the first place. Along with this would be the meanings attached to the routine as it is embodied by specific individuals temporally located in specific times and places, and embedded in the existing contending logics of action within the organization (Hardy, 1996).

From this perspective, when the practice context is characterized by aligned logics of action, it seems reasonable to envision evidence being used to create awareness as to reach collective agreement. Thus, it is likely that evidence would increase one’s belief in the benefits of the decision, which is consistent with what we found--logics of action in alignment amplified the impact of evidence on commitment to the decision (H4a). Reproducing this practice throughout the organization would make perfect sense and this is exactly what we found (H1b).

When conflicting logics of action are operating, it seems reasonable to speculate that evidence is strategically introduced to advance a specific agenda. In a study of academic shared governance processes, Kezar (2004: 44) found that on campuses where conflicting logics of action were predominant “people were acting out of fear or anger. They did not communicate openly or honestly; they withheld data and information, they lobbied for an interest rather than listening, and they were unable to see common goals.” Consequently, it is likely that any evidence introduced would be held suspect and commitment to the decision would be eroded (Pope, 2004).

This perspective is echoed by Feldman & March (1981) who observed that where there is conflict of interest, information can be an “instrument of power” wielded
to advance a predetermined position with seemingly objective authority. They conclude, “If most received information is confounded by unknown misrepresentations reflecting a complicated game played under conditions of conflicting interests, a decision maker would be curiously unwise to consider information as though it were innocent” (Feldman & March, 1981: 177). And, indeed, this is consistent with what we found—conflicting logics of action dampened the impact of evidence on commitment (H4a). Now, reproducing this practice throughout the organization would make no sense at all and yet, this is exactly what we found (H1b).

How are we to account for this finding? According to institutional theory, individuals are restricted in their options by structural constraints that lead them, through their interactions, to recreate the very same constricting conditions without regard for the rationality of doing so (Barley & Tolbert, 1997). In the present study, it is entirely possible that individuals were carried along by the contending logics of action. Thereby constrained in their ability to effectively employ any strategies outside the bounds sustained by entrenched patterns of collective identities, their interactions would simply reinforce and enable more of the same. And, sadly, institutional theory predicts this outcome would manifest even if evidence were introduced with the most honorable of intentions (Giddens, 1994). This finding would suggest an important cautionary caveat relevant to the impact of EBMgt on implementation success. Where contending logics of action are in operation, the ‘push’ of research evidence down the hierarchical ladder of authority can serve to further anchor existing patterns of difference and scuttle implementation of the decision reached. Significantly, though, the affordance of inquiry provided by procedural rationality was not subject to the same influence. Even when
logics of action were conflicted, procedural rationality increased commitment to the decision.

Before we get too excited about the positive influence of procedural rationality, we need to consider our second interaction. The combined impact of evidence with procedural rationality did not simply amplify the impact on our outcomes across the board. First, the combination of both elements was not associated with any synergistic effect for commitment (H3a: $\beta = .08$, $p < .379$). In terms of practice recreation, amplification was only demonstrated when one element of EBMgt was high and the other element was low (H3b: $\beta = -.204$, $p < .021$). It is easy to surmise that when both elements are low there is little to recreate. An amplified effect when evidence was high and procedural rationality was low would be consistent with Feldman & March’s (1981) view of information as an instrument of power. However, amplified recreation when procedural rationality was high and evidence was low is a bit of a puzzle when we consider that procedural rationality on its own did not impact recreation. Equally curious is the dampened effect when both procedural rationality and evidence were high. Of course, it is also possible that evidence discovered may be contrary to the interests of one side and rather than being convinced the evidence, commitment to the decision is eroded. Admittedly, the work of Brunsson (2000), Langley (1995) and Schwartz (2004) mentioned earlier suggests that a combination such as this would cause confusion and paralysis. Perhaps there is wisdom in the turn of phrase that too much of a good thing is not a good thing.

This leaves us on a positive note from which to move forward. This study provides a small nugget of empirical evidence that supports the idea of EBMgt as a
contributing factor in the creation of organizational effectiveness and adaptive evolution. While there may be some contingencies where the substantive rationality of EBMgt becomes contraindicated, this study also suggests the possibility of a new tool in the evidence-based management repertoire—routines of procedural rationality—to effectively address those contingencies. Finally, this study provides a small glimpse into the challenges and payoffs of introducing EBMgt into arenas where the power, politics and conflict inherent in shared leadership often trump traditional views of rational decision and action.

**LIMITATIONS**

The thoughtful construction of any research endeavor by its very nature limits generalizability of the findings in some fashion. The present study is no exception. First is the generally high level of educational attainment in this sample. While this distribution will likely be similar to that found in professional service firms, it may be uncharacteristic of general management settings. Nevertheless, the skill set that accompanies this level of education allowed us to rule out some of the common barriers to EBMgt cited in the literature and look deeper into the interpersonal dynamics involved in this approach to management. Of course, having additional constructs in the model to account more directly for the influence of conflict, motive, and power would have taken us even further down this path.

The choice of measurement model specification is worthy of note here as well. The two exogenous constructs included in the research model could, on their surface, appear more formative than reflective in nature (Diamantopoulos & Winklhofer, 2001). These distinctions are not necessarily clear. Due to theoretical overlap in the items, they
may actually tap into the same underlying processes making reflective modeling appropriate (Diamantopoulos and Siguaw, 2006). In addition, the acceptable RMSEA in the CFA model (.043) and the low RMSEA in the SEM model (.014) provide confidence in the validity of the findings as RMSEA has been identified as the best index for detecting measurement model misspecification (MacKenzie et al., 2005).

**IMPLICATIONS FOR RESEARCH & PRACTICE**

Beyond the direct findings, several interesting notions rise to the surface with implications for research and practice. First, this study suggests the possibility of multiple rationalities driving interpretation of what comprises a quality decision when utilizing EBMgt in practice.

Much like alternate views of science and research methods faced on the scholarly side, perhaps there is wisdom and value in acknowledging equally valid competing rationalities on the practitioner side of EBMgt. Along these same lines, the dynamics of evidence-based management in group settings presents intriguing possibilities for conceptualizing a continuum of evidence-based management strategies. There need not be one size to fit all. At a minimum, this study highlights the importance—if not the necessity—of including political rationalities in future empirical study, theoretical development, and practical implementation of EBMgt.

Overall, procedural rationality appears to have great potential for the EBMgt toolbox. At a minimum, it provides a routine that allows for affordance of inquiry at the ostensive level (Greeno, 1994)—the possibility for activity that can intertwine equally valid logics of action with a “scientific attitude of mind” toward a vision of the organization that is bigger than either logic could be alone (Follett, 1924). That said,
affordance does not guarantee effectiveness as demonstrated by this study. Procedural rationality goes well beyond the substantive and cerebral exercise of identifying counterfactuals (Wong, Galinsky & Kray, 2009) or playing devil’s advocate (Schwenk, 1990). Routines of procedural rationality are enlivened by the embodied, embedded and temporally connected logics of action instantiated within people within organizations. As such, more is surely needed from both scholars and practitioners.

Performative routines must be refined and designed to support integrity of human interaction that is both honorable and respectful. We also need methods for cultivating a “synthesizing and integrating logic” that encompasses all the elements of substantive, practical and political rationality (Drucker, 1955; Follett, 1924). This is, most assuredly, no easy task but this should not dissuade us in our efforts.

As we move forward in translating a model of evidence-based medical practice to one apropos for organizational management practice, perhaps what is needed is a change in our thinking. There is no doubt that activities based in substantive rationality have laid the foundation for EBMgt. Partnerships between scholars and practitioners to design and conduct targeted studies relevant to specific problem dimensions will enrich the relevance of empirical research. Constructing systematic reviews and meta-analyses of identified problems, constructs, or approaches to guide practice will enrich the rigor of practitioner recommendations. Packaging evidence to inform, direct or enhance operations and legitimacy will facilitate diffusion of empirical knowledge within a variety of professions. These activities are all essential to the continued development of EBMgt.
There is also no doubt that “What distinguishes our age from every other is…a frantically accelerating pace of change” (Hamel, 2007: 42). We can no longer afford to settle for methods that simply refine approaches for high fidelity replication of what has proven successful in the past as is the goal for much of evidence-based practice as it is modeled today. While there is undoubtedly a need and place for this type of guidance, we also need a management approach that can think on its feet and reflexively evolve with the pace and flow of constant change that characterizes the world today. Perhaps we need to pay attention to the enactment of evidence more as a journey lest we be left in the churning slip stream behind the velocity of our knowledge economy. In the muddled world of organizational management, perhaps the value of evidence lies not in its status as a disembodied force of reason but in its capacity to serve as a lever that can trebuchet us into the thrust. This approach would call for the design of EBMgt practice that engenders the use of evidence toward creation of innovations that can evolve within the complexity of relationships and context. A model such as this would be as much about the human elements of communicative action within social interaction as it is about the technical elements of rational action that govern the production, dissemination, and direct application of research.

Finally, our findings present an interesting point of comparison with emerging themes in the on-going AoMLE dialogue about MBA programs. The ‘deep structure’ of institutional contexts (Thompson & Purdy, 2009) instantiated in ‘collections of coalitions’ (Navarro, 2008) that serve as barriers to curricular innovation sound hauntingly familiar. Likewise, the suggestion of inquiry rather than advocacy (Starkey & Tempest, 2009) and use of empirical research findings (Lewicki, 2013) as paths to
finding areas of alignment between faculty and administrators (Klimoski & Amos, 2012) sound pleasingly hopeful and serve as an unexpected point of triangulation for our findings. Perhaps this study will be of service to the AoMLE community as we navigate through similar waters toward integrating EBMgt into the MBA curriculum.

References


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### TABLE A1
Construct Definitions and Final Items

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<td>Evidence</td>
<td>Types of information utilized in decision-making process</td>
<td>To what extent did the committee consider…</td>
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<td></td>
<td></td>
<td>EM1 Benchmarking data related to progress of other colleges? EM2 Practices from the accreditation website or conferences? EM3 Empirical research from peer-reviewed journals? EM4 Information from professional association magazines, newspapers web-sites, or newsletters? EM5 Research from funding sources?</td>
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<td>.773</td>
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<td>Extent to which the decision process involves the search and analysis of accurate information</td>
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<td>PR2 Analyze relevant information?</td>
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<td>PR3 Use quantitative analytic techniques?</td>
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<td></td>
<td></td>
<td>PR4 Focus attention on crucial information and ignore irrelevant information?</td>
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<tr>
<td>Commitment</td>
<td>Belief in inherent benefits of the change. Emotional attachment to &amp; identification with the change.</td>
<td>AC3 I think that the college is making a mistake by introducing this change. (R)</td>
<td>.789</td>
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<tr>
<td></td>
<td></td>
<td>AC5 Things would be better without this change. (R) AC6 This change is not necessary. (R)</td>
<td>.752</td>
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<td>As a result of your accreditation committee experience, do you engage in more or less of the following behavior in other college committees on which you serve?</td>
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</tr>
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<td>Recreation</td>
<td>Actions taken to improve the functioning of subsequent college committees on which they serve</td>
<td>TC1 Try to change how committees are run in order to be more effective.</td>
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<td>Of Practice</td>
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<td>TC2 Try to correct faulty procedures or practices within committees.</td>
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<td></td>
<td></td>
<td>TC4 Make constructive suggestions for improving how things operate within the committees.</td>
<td>.772</td>
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<td>Conflicting</td>
<td>Perceived level of conflict &amp; cooperation between faculty &amp; administrators</td>
<td>FA1 Faculty and administration are mutually supportive of one another. (R)</td>
<td>.841</td>
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<td>Logics Of Action</td>
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<td>FA2 The faculty and administration are hostile toward each other. FA8 Relationships between faculty and administration are satisfactory. (R)</td>
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ABSTRACT

Evidence-based management (EBMgt) has been advanced as a way to utilize research findings to propose an ‘optimal’ solution to a problem within a centralized authority structure. In shared leadership settings, decisions are typically complex and punctuated by divergent perspectives emanating within the organization. In these circumstances, the substantively rational decisions advanced by EBMgt must also be infused with commitment for coordinated action among diverse interests throughout the organization. Is EBMgt a viable approach in these circumstances? We posit that communication that takes place around the evidence and conflict that exists between diverse interests within the organization are key factors that will influence the effectiveness of EBMgt in shared leadership settings. In a cross-sectional study, we study individuals in groups as routines supporting EBMgt are enacted in practice. Our results show that under conflict such professional groups are less likely to engage in EBMgt and more likely to generate affective conflict of anger and resentment. This increases deployment of evidence but damages the commitment necessary for decision implementation. We also discover the value of a new feature to EBMgt— that of collaborative search for evidence. This joint activity increases productive engagement between diverse interests and strengthens individual commitment to the decision as well as willingness to introduce the activity into other shared decision making groups in the organization. Overall, our study identifies several so far unexplored contextual and interpersonal elements that support or impede EBMgt outcomes.

Keywords: Evidence-based management, group decision, shared leadership, logics of action, commitment, diffusion, cognitive conflict, affective conflict, strategy as practice
Evidence-based management (EBMgt) is on its way to become a common phrase in our organizational vernacular. Built on the idea of substantive rationality (Simon xxx), current models of EBMgt assert that the best answer to an organizational problem can be deduced through a converging set of scientific research findings and professional expertise. The untethered exponential growth in its adoption across multiple fields would seem to suggest its unequivocal benefit (Trinder & Reynolds, 2000). Yet, there is much we do not know. Empirical evidence demonstrating the benefits of EBMgt in practice is, ironically, relatively limited (Reay, Bert & Khon, 2009; Speicher-Boca & Adams, 2012). Consequently, many have voiced concerns about the value of the widespread adoption of a model that is not evidence based (Learmonth, 2009; Learmonth & Harding, 2006; Morrell, 2008; Zaplin & Blohowiak, 2011). Understanding of the processes by which, and the conditions under which, EBMgt promotes or hinders organizational decision making has yet to be constructed.

Dominant theoretical frameworks for EBMgt typically center on decision-making where a single manager (or professional) vested with centralized authority must make a decision. However, recent management literature places the burgeoning nexus for most strategic decisions within shared leadership structures such as those found in top management teams, hospitals, colleges, cultural institutions and other pluralistic organizations (Denis et al., 2007; Denis, Langley & Sergi, 2012; Johnson et al., 2007; Lowendahl & Revang, 1998). What is different about these contexts is the interactive complexity generated by people with equally divergent, yet often equally valid, perspectives coming together to construct a joint decision (Pache & Santos-Insead, 2013). Is EBMgt a viable approach in these circumstances?

Classic theorists in organizational decision making suggest that, in these contexts, evidence may be brought to the table much like the Wonderland gardeners painting the white roses red to please the Queen of Hearts—what Weiss (1979) described as “grist for the mill” of whatever agenda is currently in play. As such, EBMgt may simply become an exercise in “dueling with data” where each interest arrives at the table equipped with their research to support their predetermined position (Baker, Ginsburg & Langley, 2010). Decision making becomes a battle around evidence and what it counts for. Precepts of social psychology suggest this dynamic could serve to solidify and further polarize initially divergent positions. As a result, common points of alignment crucial for effective shared leadership can be lost (Staw, 1976). Hence, in these scenarios, we face a realistic concern that EBMgt could potentially do more harm than good.

This concern was corroborated in our initial study (Walker & Lyytinen, 2011). We examined the moderating effect of conflicting interests on commitment to decision and willingness to introduce evidence-based decision making into other shared decision
groups within the organization. The findings show that in a complex environment thick with politics, the use of evidence in group decision making can erode the commitment necessary for decision implementation. Encouragingly, we also discovered the collaborative search for and analysis of evidence can be effective in bolstering commitment in these circumstances.

Thus, communication that takes place around the evidence, particularly when there is conflict between the interests, is of key importance. On one hand, cognitive conflict in the form of lively and sound debate around different thoughts and opinions can become a constructive element of group processes for the depth and breadth it brings to discussion (Russo & Schoemaker, 2002). On the other hand, affective conflict in the form of disputes that become personalized can create a destructive element because of the resentment and distrust it brings to relationships (Amason & Sapienza, 1997; Schwenk & Valacich, 1994). Overall, recommendations emerging from meta-analyses point to the importance of adopting a contingency perspective when evaluating the impact of conflict on group processes (DeDreu & Weingart, 2003; DeWit, Greer & Jehn, 2012). The type of conflict, the context in which it occurs, and the methods used to seek resolution all play a part in the overall impact of conflict. As such, use of EBMgt in shared decision making scenarios will need to address more than just the nature of evidence utilized. Alas, current models of EBMgt do not address these factors in accounting for the possible effects of EBMgt.

We argue that EBMgt has a potential for improving decision quality within shared leadership structures, albeit with a value distinct from that espoused in the current models. Rather than being a source of instrumental value for identifying pre-designed solutions, evidence can serve as a boundary-object to conceptually frame issues and possibilities across diverse perspectives (Beyer & Trice, 1982; Weiss, 1979). We propose that evidence collaboratively discovered through a dynamic process of search and analysis avoids the risk of becoming grist for the proverbial millstone. Instead, evidence collaboratively discovered can provide a deliberate focus for engagement in shared decision making that supports constructive cognitive conflict while minimizing destructive affective conflict (Stanovitch, 2010). Evidence discovered through this type of process can also infuse a decision with the individual commitment necessary for effective decision implementation. We further propose that once experienced, this process can become the impetus for diffusion of EBMgt based routines in subsequent decision groups throughout the organization. By identifying contextual elements and routines that support or impede the actual outcomes of EBMgt, we can consequently shape implementation prescriptions that increase decision-making effectiveness in shared leadership settings.

We conduct a cross-sectional survey to validate these claims. The survey seizes the opportunity provided by the introduction of a new accreditation process into the U.S. community college system. We study evidence-based collaborative decision-making in school level strategy groups where the groups are primarily comprised of scholars serving to govern their institution. Decision-making behaviors of 139 community college faculty, staff and administrators involved in accreditation committees across 13 colleges are examined along with their commitment to the emergent decision and behavior in subsequent committees. This particular setting is uncharacteristic of those studied thus far.
in that it is rich with elements identified in the literature to facilitate adoption of EBMgt and absent many of the identified barriers (Booth, 2011; CITES). As such, this setting presents intriguing possibilities for examining the practice of EBMgt in a relatively ideal setting thereby allowing some of the more complex elements to stand out (Goldkuhl, 2011).

Our thesis will advance as follows. First, we briefly introduce a typology of frameworks for EBMgt. We focus on models that provide insight for actual use of EBMgt in organizational practice, rather than those that contribute to theoretical foundations. We then turn our attention to the organizational behavior literature to establish a framework for understanding the unique implications of using EBMgt in contexts of shared decision making characterized by conflict. We focus on the potential of EBMgt to contribute to two meaningful organizational outcomes in these scenarios—effective action that follows commitment to decision and adaptive organizational evolution that unfolds through diffusion of practice. Based on this groundwork, we introduce a research model to predict the impact of a new skill for EBMgt in practice-collaborative search for and analysis of evidence. After a review of the research methodology, sampling and analysis, we advance discussion around EBMgt to include contextual and interpersonal elements that support or impede EBMgt outcomes in practice.

LITERATURE REVIEW

Models for Evidence-Based Management in Practice

The foundational premise of EBMgt is that decisions will be of higher quality when they are systematically informed by scientific evidence (Rousseau, 2006; Sackett et al., 1996). Theoretical frameworks thus center on nature of the evidence in terms of its rigor and relevance as well as facilitators and barriers of its use (Rousseau, 2012; CITES). Many, if not most, of these models focus on either the appraisal and use of evidence by autonomous professionals or the ‘top-down’ implementation of evidence-based guidelines and protocols (Wilkinson, Johnson & Wimpenny, 2010). Missing, however, have been studies that demonstrate the actual effectiveness of EBMgt in organizational practice (Lawler, 2007; Reay et al., 2009).

Another type of framework has emerged in the health care arena that focuses on the impact of knowledge use in the day-to-day practices of an organization (Baker, Ginsburg & Langley, 2010; Bick & Graham, 2010). These models fall under the typological category of “Organizational Excellence” (Wilkinson, Johnson & Wimpenny, 2010: 52). From this perspective, ‘impact’ refers to any ‘difference’ that has been made for the professional, the organization, or the stakeholders as a result of evidence use in decision making. These models depict implementation of EBMgt as a ‘bottom-up’ process entwined in the complexity of organizational dynamics (Bick & Graham, 2010). Hence, these models focus on interactions around the evidence rather than the nature of evidence itself (Wilkinson, Johnson & Wimpenny, 2010).

Missing in all these models, however, is an understanding of what happens between decision and outcome. All too often we assume people will be moved to effective action through simple presentation a new truthful fact. Yet, there is an
abundance of organizational research that indicates decisions—even the better ones—do not automatically lead to action (Laroche, 1995; Van de Ven & Sun, 2011). There is also ample evidence demonstrating that processes thought to promote rational decisions may actually erode the commitment necessary for effective implementation (Korsgaard, Schweiger & Sapienza, 1995). Hence, understanding the psychological processes involved with behavior change will be essential to effective implementation of evidence-based management (Michie, Johnson, Abraham, Lawton, Parker & Walker, 2005).

This framework is consistent with recent integrative, multifaceted conceptualizations of information use in strategic groups (Choo, 2006; Pettigrew et al., 2001; Saracevic, 1997; Wilson, 1994). These models “view information seeking as a dynamic, ongoing process that is constituted both by the actions and needs of the individual, and by the social and physical features of the environment in which the individual gathers and uses information” (Choo, 2006: 32). This framework is also consistent with recent ‘strategy as practice’ perspectives that focus on the daily activity of how decisions are actually made as well as the nature of their eventual outcome (Goldkuhl, 2011; Johnson et al., 2007; Pentland et al., 2012; Scott, 2001; Smets et al., 2012). Choo (2006: 41) explains:

“Our starting position is that the information user is a sentient cognitive actor; that information seeking and use is a dynamic process extended over time and space; and that the context of information use determines in what ways and to what extent the received information is useful.”

These models all suggest that implementation of EBMgt will be embodied in individuals who are embedded in social contexts situated in a specific time and place. As such, advancing EBMgt in practice will require attention to a complex amalgamation of contextual factors within the organizational structures of decision making. It is to these thoughts we turn next.

**Three Challenges of Organizational Decision Making**

The challenges of organizational decision making are three-fold. First, correct decisions must be made within specified time frames. Second, committed action must follow to insure enactment of decisions within the organization. As such, conditions must be created for coordinated action among diverse interests embedded within complex relationships (Embirbayer, 1997; Follet, 1924). Third, good decision behaviors must diffuse throughout the organization in ways that allow for adaptive actions that remain responsive to changing conditions. In the day-to-day realities of practice, these tasks are interdependently linked through social interactions that occur between individuals and groups within the organization (Baker, Ginsburg & Langley, 2010).

These challenges become particularly salient for organizations where leadership and decision making is a collective task (Denis, Langley & Sergi, 2012). Collaborative decision-making groups are generally faced with “large, expensive and precedent setting [choices] producing ambiguity about how to find a solution and uncertainty in the solution’s outcomes” (Nutt & Wilson, 2010: 4; Mintzberg et al., 1976). They are charged
with making choices that require substantial organizational resources and have implications for other parts of the organization (Morris et al., 2010: 289). Solutions will be equally complex, extending far beyond implementation of a single, simple solution proven to be effective for a specific, isolated, and often technical problem (such as correct diagnosis). As such, decisions of these groups fall within the realm of strategic management and decision making (Morris, Greenwood & Fairclough, 2010) but have yet to be considered in models of EBMgt.

**Information & Decisions**

The first challenge in decision-making is that correct decisions must be made that accurately discern requirements, risks and benefits of the proposed course of action while taking into account available organizational resources and capabilities. This task is rooted in Simon’s (1976) idea of substantive rationality--sequential deliberations involving mathematic-like certainties that map clearly defined problems and goals into solutions based on substantive knowledge of the domain. A quality decision, from this perspective, is one rich in explanatory and predictive validity based on the factors considered.

Better decisions, according to theories of EBMgt, emerge when decisions are informed by better information and knowledge (CITE). Here, ‘better information’ means using findings from controlled research studies in conjunction with sound professional expertise to make an informed and conscientious organizational decision. These decisions are presumed to lead to effective action, and hence, better outcomes (Rousseau, 2006). The most recent conceptualization of EBMgt describes it as a “knowledge-intensive, capacity-building way to think, act, organize, and lead that will develop better managers and lead to effective and adaptive organizations” (Rousseau, 2012). As such, the substantive quality of the decision rendered is but one consideration in the value of EBMgt. Building organizational capacity for effective action and adaptive evolution are equally relevant concerns. These are the focus for the next sections.

**Commitment, Procedural Rationality and Effective Action**

The ultimate success of any good decision depends on commitment to it (Dooley & Fryxell, 1999; Guth & MacMillan, 1986; Laroche, 1995; Nutt, 2010; Schwenk, 1989; Wooldridge & Floyd, 1990). Commitment is defined both as a belief in the decision’s contribution to quality (Nutt, 1998) and a personal attachment that “binds an individual to a course of action deemed necessary for the successful implementation of a change initiative” (Herscovitch & Meyer, 2002; 475; Klein, Becker & Meyer, 2009). As such, commitment precedes and motivates action necessary for effective implementation of decisions (Bennis, 2000; Drucker, 1955; Klein & Sorra, 1996; Laroche, 1995; Meyer, 2009; Neubert & Cady, 2001). Without it, individuals are not only unlikely to persist in behaviors necessary to implement decisions, but also more likely to engage in passive compliance or active undermining that will scuttle a change initiative (Guth & MacMillan, 1986; Herscovitch & Meyer, 2002; Korsgaard et al., 1995; Schwenk, 1989).

Commitment is even more critical when leadership is enacted as a collective process as it becomes subject to the idiosyncrasies of social-construction (Denis, Langley
Large-scale changes in these organizations require a high level of buy-in and invested action on the part of those most affected by the change so their engagement is crucial to the process (Becker, Klein & Meyer, 2009; Pfeffer, 1998). In these circumstances, when people believe processes preceding decision have been conducted fairly and they perceive a benefit in the proposed change, a greater investment in the sustained actions necessary to bring the initiative to fruition is more likely to occur (Fedor, Caldwell & Herold, 2006; Gopinath & Becker, 2000). Thus, cultivating commitment to the coordinated action necessary to implement decisions requires attention to the processes that will facilitate active engagement with social and political forces within the organization (March, 1987; Simon, 1976).

According to Simon (1979), committed decisions emerge when attention has been paid to both the substantive rationality of content and the procedural rationality of process. Procedural rationality is accomplished through the interaction of prior knowledge, expert information and contextual observations (Bazerman & Neale, 1983; Follett, 1924; Langely, Mintzberg, Pitcher, Posada & Macary, 1995). As such, it captures one of the defining features of EBMgt—a process of integrating professional expertise and judgment with the use of research evidence (Rousseau, 2012)—and places it in the context of shared organizational decision making. Procedural rationality facilitates active and on-going engagement between diverse constituents involved in shared decision making, thereby cultivating commitment.

Diffusion, Routines and Adaptive Organizational Evolution

Diffusion has been identified as key to an organization’s adaptability, particularly with regard to knowledge utilization (Green, Ottoson, Garcia & Robert, 2009; Rogers, 2003). Once a decision is enacted and people experience the relative advantages of a proposed change within the context of their daily operations, they must be moved to recreate the action throughout the organization (Rogers, 2003). On a superficial level, diffusion simply reflects the spread of a new idea or way of doing things. One way to accomplish this goal is by instituting established patterns of repeatable behavior across interdependent actors. Such routines provide a disembodied and disembedded template for action that can serve to diffuse specific prescribed actions throughout an organization (Becker, 2004; Goldkuhl, 2011; Pentland & Feldman, 2005; Smets, Morris & Greenwood, 2012). On a deeper level, however, diffusion represents a change in the structure and function of an organization necessary for adaptive evolution (Rogers, 2003; Thorpe, Macpherson & Pittaway, 2005). The literature argues that such deep diffusion is not generally tied to established new procedures; instead, deep diffusion springs from interpersonal influence over time (Rogers, 1995). The life people breathe into new practices through reflexive adaptation is what will move a new practice throughout the organization (Greenhalgh, Robert, MacFarlane, Bate & Kyriakidou, 2004; Lounsbury & Crumley, 2007; Page, Wallace, McFarlane & Law, 2008).

Somewhat paradoxically, routines are an integral part of this process as well. Once understood only as a source of prescribed stability, routines are now also recognized as mechanisms for organizational change (Feldman & Pentland, 2003; Page et al., 2008; Pentland et al., 2012). From this perspective, a certain amount of practical
discretion is needed to reflexively modify new actions to appropriately adapt to complex environments and changing demands (Feldman & Pentland, 2003; Page, Wallace & Law, 2008). Routines of this nature, like procedural rationality, provide templates for action as they become embedded, embodied and enacted in day-to-day practices (Pentland, Feldman, Becker & Liu, 2012). Specific actions thus emerge amidst the complex dynamics of professional relationships and organizational structures (Hawe et al., 2004; Davies, Tremblay & Edwards, 2010). Innovations that emerge in this fashion are received by professionals far better than those imposed with a strict list of top-down directives (Ferlie et al., 2005).

The question thus becomes, "What are the routines that allow for thoughtful, inductive, and evidence-based decisions by groups of discerning professionals?" Shown to be effective are routines rich in procedural rationality that acknowledge the validity of divergent viewpoints and provide transparent processes that allow for discovery of common ground through joint inquiry (Guth & MacMillan, 1986; Klein et al., 2009; March, 1987; Royer & Langley, 2008; Schwenk, 1989; Wooldridge & Floyd, 1990). Specific frameworks for EBMgt have been advanced with positive implications for both commitment and diffusion such as: deliberative dialogue (Culyer & Lomas, 2006; Dopson, Fitzgerald, Ferlie, Gabbay & Locock, 2002; Mitton, Adair, McKenzie, Patten & Perry, 2007); social construction of knowledge (Ferlie, Fitzgerald, Wood & Hawkins, 2005; Nutley et al., 2007); design science (van Aken & Romme, 2012); problem-finding and problem-solving (Nickerson, Yen & Mahoney, 2012); evidence-based organizing (Tourish, 2012); and transparent participatory inquiry (Hodgkinson, 2012; Huffman & Thomas, 2008; Van Aken & Romme, 2012; Zaplin & Blohowiak, 2010). Common to all these approaches is that they recognize the significance of both substantive and procedural rationality in the creation of quality decisions that will lead to effective action and adaptive evolution. What is not addressed, however, is the impact of interpersonal conflict during decision deliberation that can derail the process.

Shared Decision-Making, Logics of Action, and Interpersonal Conflict

Institutional theorists have long known that the use of information and formal analysis are always embedded in the informal political structures and unspoken social norms of an organization (Langley 1989; Scott, 2008). This contextual fabric animates philosophies that frame interpretative processes and subsequently direct participant’s beliefs and behavior (Alford & Friedland, 1985; Thornton, Ocasio & Lounsbury, 2012). In collaborative decision making groups, these philosophies often center on exchange relationships among subgroups where perspectives on desired outcomes and the means to achieve them differ significantly (Bacharach, Bamberger & Sonnenstuhl, 1996). Thus, the cognitive framework driving each subgroup represents a sort of ‘logic of action’ that determines framing and resolution of decision challenges faced.

Logics of action can vary between different professional groups within an organization such as those observed between distinct medical professions within a hospital, or between (and within) faculty and administrators within higher education (Denis, et al., 2013; Swan et al., 2010; CITES). These shared patterns of reasoning, instantiated within individuals, operate as a kind of semi-automatic, silent script for social
interaction between the professions (Brown, 1983; Pache & Santos-Insead, 2013; Townley, 2002). These social constructions serve to enable and constrain behaviors that occur in organizational practices like group decision making (Bacharach & Menell, 1993; DiMaggio, 1997; Thornton et al., 2012).

Multiple equally valid, yet divergent logics of action typically co-exist within each organization and can contribute to organizational effectiveness as they bring checks and balances to decision making through the diversity of views expressed. Conflict that springs from their differences can be leveraged to deepen critical evaluation of alternatives. However, if not managed well, such patterns of difference can result in animosity that becomes reinforced and reproduced in perpetuity, restricting realization of mutually beneficial possibilities (Giddens, 1984; Swan, Bresnen, Robertson & Dopson, 2010; Thornton & Ocasio, 1999).

Clearly, contending logics of action can potentially have a significant impact on decision performance, particularly where shared decision making is involved. Yet, few empirical studies are available to shed light on the practical dynamics engendered by them (Lounsbury, 2007; Swan et al., 2010). As such, their impact on EBMgt in practice is, likewise, unknown.

Organizational theory suggests decision-making arenas can become a platform for competing logics of action to jockey for power or assert authority (Brewer, 1981; Denis, et al., 2007; Follett, 1924). Hence, decision making can become less about principles of formal reasoning and more about the realities of power where decisions, in the end, emerge through the interplay of partisan agendas (Baker, Ginsburg & Langley, 2010; Langley et al., 1995; Royer & Langley, 2008). Data and research become valued more for political purposes and less for informing the actual content of decisions (Allison, 1996; Feldman & March, 1982; Weiss, 1976). Interpersonal conflict is also a common outcome and often prevents forward movement (Brown, 1983; Jehn, 1995; Pache & Santos, 2010; Tourish, 2012). However, this need not be the case. Recent literature depicts a landscape of decision processes where different types of conflict have varied impacts—some good and some bad (cite task & relationship).

Cognitive conflict, characterized by diverse thoughts and opinions related to the task or decision at hand, is generally viewed as a constructive element in the decision making process (Schwenk & Valacich, 1994). Its presence is believed to facilitate information exchange (Amason & Sapienza, 1997), encourage healthy skepticism of assumptions and critical evaluation of alternatives (Schwenk & Valacich, 1994), as well as invest participants with a sense of influence that ultimately increases commitment to the decision (Amason, 1996; Prayitam & Dooley, 2009). The deliberate and conscious dialogue involved in cognitive conflict holds potential for design of a decision that adopts the best of each side while avoiding the pitfalls of both (Cerulo, 2010; Weick, 2004). Thus, theoretically, a decision emerging after such intense scrutiny may actually be better than one meeting with easy agreement. Social connections forged between people during such deliberations can emerge as added benefits engendered during the process of discovery (Langley, 1989: 609; Lindblom, 1990; Zarefsky, 2009).

Conversely, affective conflict, characterized by personalized disputes that arouse resentment and mistrust, is generally considered a destructive element in the decision-making process (Amason & Sapienza, 1997). The automatic and inadvertent internal
reactions involved in affective conflict damage trust, erode commitment, and trigger withdrawal from meaningful participation (Amason et al., 1995; Cerulo, 2010; Parayitam & Dooley, 2009). These studies recommend creating interaction that honors cognitive conflict while minimizing affective conflict (van Aken, 2005). Processes rich in procedural rationality are shown to mitigate affective conflict. Respectful information exchange, collaborative behavior and joint decision making serve to reduce mistrust and animosity (CITES). Thus, procedural rationality has implications for ameliorating the automatic perceptions and reactions often seen where logics of action get conflicted (Mooney, Holahan & Amason, 2007).

Recent meta-analyses paint a more complex picture of the effects of conflict. Both forms of conflict have potential for negative impact on the effectiveness of group decisions as well as the degree of individual commitment to implementation (DeWit, Greer & Jehn, 2012). Emerging from these studies is an understanding that the impact of conflict is best understood through a contingency perspective. That is, the effects of conflict are dependent on the type of conflict involved, as well as the context in which it occurs, and the methods used to seek resolution. Clearly, attention to the process of decision making, and how it may change when empirical evidence is part of deliberations, appears to hold great potential for shaping prescriptions for implementing EBMgt in shared leadership contexts. This study is a step in that direction.

RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

This study seeks to better understand the conditions under which EBMgt promotes organizational performance and the processes by which those outcomes may be obtained. It expands a prior study (CITE) that examined the moderating effect of conflicted logics of action on commitment and recreation of practice in shared decision making groups. The study findings show that in a complex environment thick with politics, the use of evidence in group decision making may actually erode the commitment necessary for decision implementation. We also discovered that routines of procedural rationality that involve collaborative search for and analysis of evidence can be effective in bolstering commitment to decision in these scenarios.

The current study expands on this work and proposes a model focused on decision processes. The simultaneous impact of procedural rationality, evidence, and conflict in shared leadership settings is used to predict meaningful organizational outcomes—commitment to decision and diffusion of practices. We propose the collaborative search for and analysis of evidence provides a pivotal influence in this process. Moreover, we propose different types of conflict will have a unique influence on how the process evolves. Consistent with “Organizational Excellence” models of EBMgt in the health care field (Baker, Ginsburg & Langley, 2010; Wilkinson, Johnson & Wimpenny, 2010), as well as recent calls in management literature to focus on micro-processes, we adopt a ‘practice perspective’ and study individual activity in groups as routines of EBMgt are enacted in practice (Goldkühl, 2011; Johnson et al., 2007; Pentland et al., 2012; Scott, 2001; Smets et al., 2012).

The theoretical focus of management literature on EBMgt to date presents us with an opportunity to carve out new territory in the quest to identify processes by which, and
conditions under which EBMgt promotes or hinders organizational performance. However, in this opportunity is also a challenge; there is no concrete map of the terrain in which to situate our study. Beyond some rather general categories for organizational effectiveness that include structure, process and outcomes, “there is as yet no pool of validated measures to operationalize the constructs defined in [implementation frameworks for EBMgt]” (Bick & Graham, 2010: 8; Graham, Bick, Tetrow, Staus & Harrison, 2010). As such, we proceed with caution as we foreground salient constructs and their relationships into a quantitative research model.

The research model depicted in Figure 1 is built with well-established constructs from organizational literature with the explicit intent to predict simultaneous and sequential direct relationships. However, given the absence of prior studies on which to base supposition and the inclusion of posited positive and negative relationships, we decided against predicting complex mediated sequences. However, the proposed serial, chained mediator model allows us to investigate both the direct and indirect effects of a temporal, sequential chain of mediators (Hayes, 2013).

Figure 1. The Research Model

Our model advances the following line of reasoning. First, effective organizational decisions must be both substantively rational in their content and procedural rational in their process in order to cultivate commitment and facilitate diffusion. Second, in a complex pluralistic environment with shared decision making, professional groups possess distinct patterns of reasoning that may differ across professions. Third, if these divergent, equally valid philosophies are not managed with respectful and collaborative engagement, they can create an undercurrent of affective conflict that damages commitment to decision. Fourth, affective conflict can incite the use of evidence as a weapon of power to support a predetermined position. This dynamic will likely damage commitment to the decision within the group. Fifth, in a complex pluralistic environment with shared decision making, building capacity for effective action and adaptive organizational evolution requires more than one way to think about the value of evidence in the decision making process. Converging scientific research
findings can provide recommendations for optimal solutions and evidence can also serve as boundary object to conceptually frame issues and possibilities across diverse perspectives. Sixth, enacting routines of procedural rationality—the collaborative search for and analysis of evidence—can serve to derail affective reactions attached to conflicting logics of action and instead, stimulate deliberate and constructive cognitive engagement. Seventh, this engagement strengthens commitment to decision and recreation of practices in subsequent decision groups. In sum, in a complex pluralistic environment with shared decision making, implementing EBMgt with routines of procedural rationality is key to building individual investment in the actual behaviors that will make the change successful over time. The next sections introduce the specific constructs employed in the model and related hypotheses.

**Dependent Variables: Commitment and Diffusion**

In situations of shared leadership, collaborative decision challenges are generally complex and involve divergent, yet equally valid, perspectives. In these circumstances, decisions must not only reflect substantively rational choices but also cultivate commitment for coordinated action and promote diffusion. For the purposes of this study, commitment is defined as a belief in the inherent benefits of the decision and/or an emotional attachment to, or identification with, the decision. Commitment of this nature that emerges from the decision process is predictive of sustained actions necessary to implement the decision. As such, commitment is essential for building organizational capacity for effective action.

For the purposes of this study, diffusion is defined as professional initiative to introduce new routines into subsequent organizational decision making groups. As such, the construct is labeled, ‘Recreation of Practice.’ This approach allows for a broad-based view of the specific behaviors that constitute a given practice (Denis et al., 2001; Nicolini, 2009). It also recognizes the complexity of organizational practices among loosely connected individuals and groups (Blackler, Crump & McDonald, 2003). Individual determination of what parts of which routine are most appropriately and realistically moved forward in a particular new arena at a specific time are not easily reduced to a simple checklist of behaviors (Denis et al., 2001; Hawe et al., 2004; Nicolini, 2009). Thus, recreation of practice captures the willingness of professionals to move forward some aspect of a new, learned practice and honors the reflexive adaptation of routines associated with the evolution of organizational improvement (Davies, Tremblay & Edwards, 2010).

**Predictor Variables: EBMgt, Logics of Action and Conflict**

**Evidence**

Evidence has been identified as the foundation for EBMgt (Rousseau, 2006), but there has been much debate about what exactly constitutes ‘evidence’ (Clancy & Cronin, 2005; Johnson & Austin, 2006). Systematic reviews of relevant double-blind randomized, controlled studies are the ‘gold standard’ in theoretical literature (Rousseau,
In the medical community, Bick & Graham (2010: 5) report, “Consensus has been reached that evidence can come from a number of sources and not just the findings of randomized controlled studies.” In the policy field, a wide range of evidence is utilized that include methodologically sound quasi-experimental, and qualitative designs, as well as published documents from government and non-profit agencies along with randomized controlled studies (Bowen et al., 2009; CHSRF, 2005; Tranfield et al., 2003). Other accounts take an even broader view that includes consideration of econometric and institutional data such as statistical performance reports, economic impact analyses, and political risk assessments as well as professional association newsletters, mainstream news sources, private foundation studies, public opinion, and stakeholder input (Kowalski & Lasley, 2008; McEwen et al., 2008; Shakespeare, 2008). Implementation studies gravitate toward an “all-encompassing” view of evidence while “trying to focus on the process and impacts, rather than get drawn into wider debates about the nature of evidence” (Wilkinson, Johnson & Wimpenny, 2010: 39).

The most recent conceptualizations specific to evidence-based management incorporate four sources of evidence into decision making: research evidence, practitioner experience and judgment, stakeholder perspectives, and information from the local context (Briner et al., 2009; Potworowski & Green, 2012).

Table 1. Research Model Constructs Corresponding to Sources of ‘Evidence’ for EBMgt

<table>
<thead>
<tr>
<th>Sources of ‘Evidence’ in EBMgt</th>
<th>Research Model Construct</th>
</tr>
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<tbody>
<tr>
<td>Research Evidence</td>
<td>Evidence</td>
</tr>
<tr>
<td>Practitioner Experience &amp; Judgment</td>
<td>Cognitive Conflict</td>
</tr>
<tr>
<td>Stakeholder Perspectives</td>
<td>Cognitive Conflict</td>
</tr>
<tr>
<td>Information from Local Context</td>
<td>Contending Logics of Action</td>
</tr>
</tbody>
</table>

Table 1 identifies corresponding model constructs for each of these necessary categories. For the purposes of this study, we capture research evidence in our first construct of the same name that includes both peer-reviewed research as well as empirical research conducted by professional associations and funding sources. Specific examples for each category are provided in Table A2 in the appendix. Practitioner expertise and judgment along with stakeholder perspectives are subsumed under ‘cognitive conflict’ which captures expression of differing opinions between group members who represent diverse interests and constituents in the organization. Finally, information from the local context is represented in ‘logics of action’ which represents professional dynamics of the organizational context.

For the purposes of this study, we view evidence as a boundary object in the decision-making process (Hodgkinson, 2012; Spee & Jarzabkowski, 2009). That is, rather than a direct solution to a specific problem, the artifact of evidence becomes a cooperative and deliberate shared focus of attention which is crucial for moving the process forward when there is an absence of consensus (Star, 2010). This view is particularly appropriate in practice situations of shared leadership where problems are
likely to be complex in nature and not amenable to one technical solution. In addition, relevant research is likely to come from the social science world and involve divergent, correlational findings that do not merge into a single best solution. In these circumstances, evidence can serve as a lever to influence the way people think about a problem and structure dialogue. The artifact of evidence in the decision making process then becomes a ‘tool’ that can be easily introduced in subsequent decision making processes.

**H1:** Use of evidence in collaborative decision making groups characterized by conflicting logics of action will increase the recreation of the practice in subsequent decision making processes.

**Procedural Rationality**

Routines rich in procedural rationality have been identified in the literature as beneficial in developing decision commitment. Collaborative search has the potential to discover evidence that can serve as an open and outward expression of opposing, yet equally valid, viewpoints. Inclusion of knowledge, professional expertise and contextual observations in analyses will help shape decisions to fit the current organizational context. As such, individuals are likely to engage in the deliberative process and perceive benefit in the proposed change. These dynamics are likely to create investment in the sustained actions necessary to implement a decision. For the purposes of this study, procedural rationality is defined as the extent to which the decision process involves the search for and analysis of relevant information.

**H2:** Procedural rationality in collaborative decision making groups characterized by conflicting logics of action will increase commitment.

**H3:** Procedural rationality in collaborative decision making groups characterized by conflicting logics of action will increase evidence use.

**Logics of Action**

In shared decision situations, multiple equally valid yet divergent logics of action are likely to be operation. These automatic silent scripts for perception and attribution enable and constrain behavior. For the purposes of this study, logics of action are defined as the perceived level of conflict between professional groups within the organization. When EBMgt is instituted in organizations, it is reasonable to envision evidence being used in the service of communicative awareness to generate understanding and collective agreement. When EBMgt is instituted in organizations with conflicting logics of action it is reasonable to speculate that evidence may be strategically introduced to advance a specific agenda. As such, evidence can become an “instrument of power” wielded to advance a predetermined position (Feldman & March, 1981). Either scenario will result in more evidence being utilized.
Likewise, when EBMgt is instituted in organizations where logics of action are aligned, there is likely to be openness to collaborative inquiry and, hence, higher levels of procedural rationality. This is likely not the case when EBMgt is instituted where logics of action are conflicted. In a study of academic shared governance processes, Kezar (2004: 44) found that on campuses where distinct logics of action were not managed well, “people were acting out of fear or anger. They did not communicate openly or honestly...they lobbied for an interest rather than listening, and they were unable to see common goals.” Hence, procedural rationality is likely to be rare in these settings.

**H4:** Collaborative decision making groups with conflicting logics of action will increase evidence use.

**H5:** Collaborative decision making groups with conflicting logics of action will decrease the extent of procedural rationality.

**Affective Conflict**

Affective conflict is defined as emotional conflict focused on personal incompatibilities or disputes (Amason, 1996: 129). Consistent with the literature discussed above, conflicting logics of action that are not managed well can result in affective conflict that becomes reinforced and reproduced in perpetuity (Giddens, 1984; Swan, Bresnen, Robertson & Dopson, 2010; Thornton & Ocasio, 1999). The automatic and inadvertent internal reactions involved in affective conflict have been shown to damage trust and erode commitment (Amason et al., 1995; Cerulo, 2010; Parayitam & Dooley, 2009). Thus,

**H6:** Collaborative decision making groups characterized by conflicting logics of action will experience increased affective conflict.

**H7:** Affective conflict in collaborative decision making groups characterized by conflicting logics of action will decrease commitment to the decision.

Paradoxically, despite the likely loss of commitment, these dynamics can lead to an increased use of evidence (Walker et al 2012). According to institutional theory, individuals are restricted in their options by institutional constraints that lead them, through their interactions, to recreate those very same conditions without regard for the rationality of doing so (Barley & Tolbert, 1997). In other words, entrenched patterns of adversarial dynamics between logics of action can constrain individual options to effectively intervene. Interactions will simply reinforce and enable more of the same. As a result, the same dynamics that lead to increased evidence use in conflicted logics of action will lead to increased evidence use as a result of affective conflict.

**H8:** Affective conflict in collaborative decision making groups characterized by conflicting logics of action will increase evidence use.
Cognitive Conflict

Cognitive conflict is task-oriented conflict focused on judgment differences about how to best achieve common objectives. Evidence discovered through controlled attention of collaborative search routines can serve as an objective and outward expression of opposing, yet equally valid, viewpoints. Deliberate and conscious dialogue encouraged by procedural rationality will transparently honor the possibility of multiple solutions thereby focusing on the cognitive manifestations of difference. Respectful and open validation of legitimate cognitive differences holds the potential to minimize any provocation of affective conflict. As such, cognitive conflict can serve as a constructive element in cultivating commitment to a decision and the diffusion of decision behaviors.

H9: In collaborative decision making groups characterized by conflicting logics of action procedural rationality will increase cognitive conflict.

H10: The use of evidence in collaborative decision making groups characterized by conflicting logics of action will increase cognitive conflict.

H11: Cognitive conflict in collaborative decision making groups characterized by conflicting logics of action will increase commitment to the decision.

H12: Cognitive conflict in collaborative decision making groups characterized by conflicting logics of action will increase recreation of the decision practices in subsequent decision processes.

RESEARCH DESIGN

The aim of the present study is to test a theoretical model suggested in figure 1 within an institutionalized political environment using a cross-sectional, self-administered survey-based quantitative study. This method allows use of a sufficient sample from multiple institutions at a single-point in time and permits sophisticated statistical analysis that can then be generalized to other populations.

The Setting

The study setting capitalizes on an opportunity provided by the introduction of a new accreditation process into the U.S. community college system as a way of supporting educational reform. While this academic quality improvement process is not described by the accrediting body as an evidence-based approach per se, it does incorporate the characteristics of “evidence-informed” practices (CHSRF, 2005; Davies, Nutley & Smith, 2000; Nutley et al., 2007). In addition, the collaborative decision process of the academic governance system is characteristic of institutionalized pluralistic organizations that are distinct in their mix of professional autonomy and diffuse authority (Jarzabkowski & Seidl, 2008; Mintzberg, 1980). These committees are involved in making key decisions about the strategies that accomplish major accreditation goals. As such, the committee’s
charge is consistent with conceptualizations of strategic decision-making in organizations as discussed above. EBMgt appears to be also an easy ‘fit’ with our population (Ansari, Fiss, Zajac, 2010). Uncharacteristic of settings studied thus far, our setting is rich with elements identified in the literature to facilitate adoption of EBMgt and absent many of the identified barriers (Booth, 2011). The committees are comprised of highly educated individuals who have chosen to work in the knowledge-intensive field of higher education where critical inquiry around ‘fact’ and the ‘nature of knowing’ are part and parcel of their daily routines (Dill, 1982). They are skilled in essential EBMgt skills frequently absent in other study samples. These skills include seeking, evaluating and using various types of information, including empirical research. Likewise, unlike many of the organizations studied in the EBMgt literature, colleges in our sample have open access to academic research databases and utilize varying levels of institutional research capabilities. All these elements have been shown to be correlated with utilizing evidence in decision-making practice (Buss & Shillabeer, 2011; McWilliam, Kothari, Kloseck, Ward-Griffin & Forbes, 2008). As such, this setting presents intriguing possibilities for examining the practice of EBMgt in a relatively ideal setting thereby allowing some of the more complex elements to stand out (Goldkuhl, 2011) and providing the potential to expand the scope of theory.

In terms of conflicting logics of action, divisions between faculty and administration within higher education appear are the norm. While academia values “intellectual creativity”, “reasoned inquiry” and “tolerance of diverse ideas and experiences” (Axelrod, 2002: 34-5, 37), numerous authors have observed that these same values do not extend into the management of these institutions (Kezar, 2004; Lee, 1991; Mortimer & O’Brien-Sathre, 2007; Ruben, 2004). In addition to differences in roles and reward structures (Del Favero, 2003), numerous polarities characterize the faculty-administration divide which have received commentary covering academic versus administrative (Conway, 1998), mission-centered versus market-smart (Zemsky, Wegner, & Massey, 2005), autonomy versus authority (Awbrey, 2007), and collegial versus bureaucratic (Swenk, 1999) distinctions, respectively. Del Favero & Bray (2005: 67, 54) conclude in their review, “A permanent state of tension and conflict mark these relationships” and “represent at best an uncomfortable alliance.” As such, these entrenched differences provide a context thick with competing logics of action and hold the potential to instantiate the “jointly extreme observations crucial for detecting interactions” (McClelland & Judd, 1993: 382; Cohen et al., 2003).

Sample and Data Collection

The sample for this study was drawn from community-colleges in a mid-western state participating in a new accreditation system utilizing a quality improvement model. Participation in this new system reflected their status as an institution with an established commitment to quality improvement as well as a proven record of accreditation compliance. In all, the fifteen community colleges in one mid-western state listed on the accrediting board’s web-site were contacted and invited to participate. The Provosts at each college were asked to provide the comprehensive membership rosters for the accreditation committees over the past five years and survey links were directly e-mailed
to college personnel by the primary researcher. Two colleges were dropped from the sample—one recently experienced a radical change in administrative leadership and declined to participate; the other was dropped due to potential conflict of interest as one of the researchers was affiliated with the college.

Six-hundred-fifty-three surveys were sent out electronically, 242 were started and 189 were returned. The survey’s relatively long completion time (25 minutes/average) may account for those who started the survey but discontinued after completing a significant portion and never returned despite two follow-up reminders. Of those that were returned, fifty cases were dropped as they were curiously discontinued within the first several questions that established how they became involved in the accreditation committee. These cases occurred across 8 of the 13 schools (of various size and geographical location) and were likely a function of committee turnover each year as a new accreditation project is undertaken.

Table 2. Demographic Profile of Respondents

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty</td>
<td>46</td>
<td>33.6%</td>
</tr>
<tr>
<td>Staff</td>
<td>20</td>
<td>14.6%</td>
</tr>
<tr>
<td>Mid-Management</td>
<td>24</td>
<td>17.5%</td>
</tr>
<tr>
<td>Administrative</td>
<td>47</td>
<td>34.3%</td>
</tr>
<tr>
<td>Unidentified Role</td>
<td>2</td>
<td>1.4%</td>
</tr>
<tr>
<td>Faculty</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-Time</td>
<td>42</td>
<td>30.2%</td>
</tr>
<tr>
<td>Part-Time</td>
<td>4</td>
<td>2.9%</td>
</tr>
<tr>
<td>Unidentified Status</td>
<td>93</td>
<td>66.9%</td>
</tr>
<tr>
<td>Tenured</td>
<td>25</td>
<td>18.0%</td>
</tr>
<tr>
<td>Not Tenured</td>
<td>19</td>
<td>13.7%</td>
</tr>
<tr>
<td>Unidentified Tenure Status</td>
<td>95</td>
<td>68.3%</td>
</tr>
<tr>
<td>Collective Bargaining Member</td>
<td>16</td>
<td>11.5%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>92</td>
<td>66.2%</td>
</tr>
<tr>
<td>Male</td>
<td>42</td>
<td>31.3%</td>
</tr>
<tr>
<td>Education Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some High School</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>GED</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>High School Diploma</td>
<td>1</td>
<td>0.70%</td>
</tr>
<tr>
<td>Technical Certificate</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Associate’s Degree</td>
<td>7</td>
<td>5%</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>18</td>
<td>12.9%</td>
</tr>
<tr>
<td>Master’s Degree</td>
<td>72</td>
<td>51.8%</td>
</tr>
<tr>
<td>Doctorate</td>
<td>36</td>
<td>25.9%</td>
</tr>
<tr>
<td>Post-Doctorate</td>
<td>2</td>
<td>1.4%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>26-35</td>
<td>10</td>
<td>7.2%</td>
</tr>
<tr>
<td>36-45</td>
<td>25</td>
<td>18.0%</td>
</tr>
<tr>
<td>46-55</td>
<td>50</td>
<td>36.0%</td>
</tr>
<tr>
<td>56-65</td>
<td>43</td>
<td>30.9%</td>
</tr>
<tr>
<td>66-75</td>
<td>4</td>
<td>2.9%</td>
</tr>
<tr>
<td>Length of Time in Higher Education Field</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5 Years</td>
<td>18</td>
<td>12.9%</td>
</tr>
<tr>
<td>6-10 Years</td>
<td>25</td>
<td>18.0%</td>
</tr>
<tr>
<td>11-15 Years</td>
<td>25</td>
<td>18.0%</td>
</tr>
<tr>
<td>16-20 Years</td>
<td>24</td>
<td>17.3%</td>
</tr>
<tr>
<td>21-25 Years</td>
<td>15</td>
<td>10.8%</td>
</tr>
<tr>
<td>26-30 Years</td>
<td>20</td>
<td>14.4%</td>
</tr>
<tr>
<td>31 or More Years</td>
<td>10</td>
<td>7.2%</td>
</tr>
<tr>
<td>Length of Time at Present College</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The final sample reflected a 23% response rate and consisted of 139 faculty, staff and administrators from academic quality improvement committees across 13 public community colleges in a mid-western state participating in a quality improvement accreditation system. Sample characteristics are summarized in Tables 3 and 4. There was an essentially equal number of respondents from colleges of various size (small, medium and large based on enrollment numbers) and from colleges with various amounts of longevity in the new accreditation process (4 to 10 years). Consistent with the average committee compositions, one-third of respondents were faculty (91% full-time and 56% of these tenured; 12% collective bargaining members) while 14% were staff, 17% mid-management, and 34% administrative. Just over half of respondents had earned a Master’s Degree (51.8%) and just over a quarter had earned a Doctorate (27.3%).

Table 3. Committee Involvement of Respondents

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>How Selected for Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volunteered</td>
<td>40</td>
<td>28.8%</td>
</tr>
<tr>
<td>Selected by Provost, Vice President, or Dean</td>
<td>52</td>
<td>37.4</td>
</tr>
<tr>
<td>Selected by Supervisor or Department Chair</td>
<td>8</td>
<td>5.8</td>
</tr>
<tr>
<td>Selected by Faculty Senate</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>By Virtue of Being a Faculty Senate Member</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>By Virtue of Being Collective Bargaining Leader</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>By Virtue of Job Function at the College</td>
<td>34</td>
<td>24.8</td>
</tr>
<tr>
<td>Length of Time on Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 Year</td>
<td>12</td>
<td>10.1%</td>
</tr>
<tr>
<td>1 Academic Year</td>
<td>12</td>
<td>8.6</td>
</tr>
<tr>
<td>2 Academic Years</td>
<td>26</td>
<td>18.7</td>
</tr>
<tr>
<td>3 Academic Years</td>
<td>39</td>
<td>28.1</td>
</tr>
<tr>
<td>4 or More Academic Years</td>
<td>47</td>
<td>33.8</td>
</tr>
<tr>
<td>Participation in Committee (on a 5 point scale where 0 = Never)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attend committee meetings</td>
<td></td>
<td>(Mean)</td>
</tr>
<tr>
<td>Active role in discussions</td>
<td></td>
<td>4.54</td>
</tr>
<tr>
<td>Complete committee tasks between meetings</td>
<td></td>
<td>4.57</td>
</tr>
<tr>
<td>Review materials prior to meetings</td>
<td></td>
<td>4.49</td>
</tr>
<tr>
<td>Research issues relevant to committee tasks &amp; decisions</td>
<td>4.40</td>
<td></td>
</tr>
<tr>
<td>Solicit feedback from colleagues within your department/division</td>
<td>4.15</td>
<td></td>
</tr>
<tr>
<td>Member of Accreditation Steering Committee</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>62</td>
<td>45%</td>
</tr>
<tr>
<td>No</td>
<td>75</td>
<td>54.7</td>
</tr>
<tr>
<td>College Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Under 2000 to 7,999 (7 colleges in group)</td>
<td>49</td>
<td>35%</td>
</tr>
<tr>
<td>Medium 8000 to 13,999 (3 colleges in group)</td>
<td>45</td>
<td>32%</td>
</tr>
<tr>
<td>Large 14,000 to 25,000 (3 colleges in group)</td>
<td>45</td>
<td>32%</td>
</tr>
<tr>
<td>Length of Time College in New Accreditation Program</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-3 Years (0 in group)</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>4-5 Years (3 in group)</td>
<td>33</td>
<td>24%</td>
</tr>
<tr>
<td>6-7 Years (5 in group)</td>
<td>63</td>
<td>45%</td>
</tr>
<tr>
<td>8-10 Years (5 in group)</td>
<td>43</td>
<td>31%</td>
</tr>
</tbody>
</table>

Construct Operationalization
Consistent with recommendations for using measures with strong reliability when testing for interactions (Cohen, Cohen, West & Aiken, 2003; Whisman & McClelland, 2005), the majority of items were selected from well-established scales with proven reliabilities of .90 or greater. A pool of 31 items across seven constructs was first piloted in accordance with procedures outlined by DeVellis (2003) and Bolton (1993). The definition of constructs and their reliability are described below.

‘Commitment’ included the 6-items from Herscovitch & Meyer’s (2002: 475) “Affective Commitment to Change” 7-point Likert scale with a reliability of .94 designed to measure a strong belief in the benefits of the change that “binds an individual to a course of action deemed necessary for the successful implementation of a change initiative.” This measure is positively related to an individual’s investment in the actual behaviors that will make the change successful over time (CITE, 2a). Based on recommendations from Jaros’ (2010:99) review of the literature on this construct, the “change-referent” was worded to reflect the specific change that emerged from the quality improvement committee recommendations. Responses were collected based on a stem that began, “With regard to the recommended changes that emerged from your committee, to what extent do you agree or disagree with the following statements?”

‘Re-Creation of Practice’ included 5-items adapted from the 10-item 7-point Likert scale with .93 reliability developed by Morrison and Phelps (1999: 403) to measure “voluntary and constructive efforts by individual employees to effect organizationally functional change with respect to how work is executed within the contexts of their jobs, work units, or organizations.” The key to this construct in the present study is the stem for each question that begins, “As a result of your accreditation committee experience...” As such, it encompasses all aspects of both procedural rationality and use of evidence that were presumably new procedures in these committees. Noteworthy is the focus on discretionary initiative related to organizational procedures as they are enacted in practice.

‘Evidence’ reflects the extent to which specific types of information were gathered to assist in the decision-making process. Five items addressed benchmarking, best practices, empirical research from peer-reviewed journals, information from professional association publications or funding sources. The categories of information were gleaned from an earlier qualitative study (Walker, Boland, Perelli & Pierce, 2009); typical sources for information in each category are included in Table A2 in the Appendix. Items were rated on a 5-point Likert scale with a demonstrated reliability of .90. Three items reflecting econometric data collected by institutional research staff were also included in the original survey. However, these were eventually trimmed from the construct during factor analysis.

‘Procedural Rationality’ was measured with 4 of 5-items on a 5-point Likert scale of the same name developed by Dean & Sharfman (1993: 589) to measure “the extent to which the decision process involves the collection of information relevant to the decision and the reliance upon analysis of this information in making the choice”. The key to this construct in the present study is the stem for each question that begins, “How extensively did the committee...” As such, the queried behaviors were in reference to what transpired in the context of the committee. The scale has an identified reliability of .80.
‘Conflicting Logics of Action’ included 8-items on a 5-point Likert scale derived from a measure by Angle & Perry (1986) to capture labor-management relations climate; the focus was adjusted to reflect faculty-administrative relationships. Reliability ranged from .92-.95 for managers and labor leaders, respectively. Statements included items such as, “Faculty and administration are mutually supportive of one another” and “Relationships between faculty and administration are satisfactory.”

‘Affective Conflict’ included the 4 items on a 5-point Likert scale from Amason’s (1996: 129) measure of the same name with a reliability of .86 designed to assess “emotional conflict focused on personal incompatibilities or disputes.”

‘Cognitive Conflict’ included the 3 items on a 5-point Likert scale from Amason’s (1996: 127) measure of the same name with a reliability of .79 designed to measure “task-oriented conflict focused on judgmental differences about how to best achieve common objectives.”

Controls: Organizational Size & Time in Accreditation System, Job Satisfaction & Demographics

To meet the substantial demands of accreditation, professionals at smaller colleges often serve on multiple project committees potentially limiting time to search, examine, and analyze relevant empirical research and statistical data. In addition, although some studies found no correlation between organizational size and commitment (Stevens, Beyer & Trice, 1978; Mathieu & Zajac, 1990), at least one study found a negative correlation (Rhoades, Eisenberger & Armeli, 2001). Information for organizational size was based on state reported enrollment levels for each institution.

Institutions with more years in the quality improvement accreditation system may be further along in creating a ‘quality culture’ that values evidence and more skilled in the application of evidence-based management principles. Information for this demographic item was based on inception dates of college involvement in the accreditation model as listed on the accreditation web-site.

Job satisfaction is known to have confounding effects on constructs related to affectivity and commitment in the workplace place (Agho et. al, 1993: 185; Thoresen et. al., 2003). The measure included 6 items from a brief version of Brayfield and Rothe’s (1951) global index of the same name with a reliability of .90. This measure targets attitude, rather instrumental benefit, related to one’s job. Age and gender were included as controls as they have been shown to explain variation in conflict and performance of diverse work groups (Pelled et al., 1999).
THE MEASUREMENT MODEL

Exploratory Factor Analysis

Data was first screened according to accepted principles covering missing, multivariate homogeneity of variance, multicollinearity or linearity (Hair et al., 2010). No major challenges were observed. EFA was conducted using principle axis factoring with a Promax oblique rotation using PASW version 18.0 resulting in the deletion of 15 items that exhibited unacceptable patterns of skewness or kurtosis, or failed to demonstrate clear loading patterns. Deleted items are listed in Table A1 in the Appendix.

Of note were some minor cross-loads and splitting of the “Evidence” construct into two factors: (a) objective data/research external to the institution and (b) data/research specific to the institution. Given the more econometric and internal nature of data in the second factor it was dropped from the current analysis in favor of data/research from external sources that is more consistent with the spirit of EBMgt. The final EFA model revealed the presence of 12 components with eigenvalues exceeding 1.0 explaining 74.272% of the variance. Good overall internal consistency was confirmed with a Cronbach’s alpha of .746.

Confirmatory Factor Analysis

A confirmatory factor analysis was conducted in AMOS (18) to confirm the identified factor structure (Byrne, 2010). The final model contained 32 items within 12 factors meeting the three indicator rule for all but the 4 demographic constructs (Organization Size, Organization Time, Gender and Age).

Table 4. Factor Loadings and Measurement Properties of Constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Loading</th>
<th>t-Value</th>
<th>Variance Extracted</th>
<th>Highest R²</th>
<th>Average R²</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EM1</td>
<td>.695</td>
<td>--</td>
<td>.64</td>
<td>.850</td>
<td>.64</td>
<td>.90</td>
</tr>
<tr>
<td>EM2</td>
<td>.688</td>
<td>7.573</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>EM3</td>
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<td></td>
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<tr>
<td>Procedural Rationality</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PR1</td>
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<td>--</td>
<td>.60</td>
<td>.746</td>
<td>.60</td>
<td>.844</td>
</tr>
<tr>
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<td>.727</td>
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<tr>
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</tr>
<tr>
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<td>.64</td>
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<tr>
<td>Recreation of Routine</td>
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</tr>
<tr>
<td>TC1</td>
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<td>.69</td>
<td>.862</td>
<td>.69</td>
<td>.862</td>
</tr>
<tr>
<td>TC2</td>
<td>.928</td>
<td>10.385</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TC4</td>
<td>.773</td>
<td>9.511</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conflicting Logics of Action</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FA1</td>
<td>.841</td>
<td>--</td>
<td>.72</td>
<td>.758</td>
<td>.72</td>
<td>.886</td>
</tr>
<tr>
<td>FA2</td>
<td>.871</td>
<td>11.513</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FA8</td>
<td>.838</td>
<td>11.142</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive Conflict</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CC1</td>
<td>.864</td>
<td>--</td>
<td>.81</td>
<td>.947</td>
<td>.811</td>
<td>.922</td>
</tr>
</tbody>
</table>
Construct Evaluation

Factor loadings were strong, uniform, and significant patterned on their expected factors with 86% loading above the recommended level of .7 as referenced in Table 4. Composite reliabilities were above the recommended threshold of .7 (ranging from .84 to 1.0). The Average Variance Extracted (AVE) exceeded the threshold of .5 (ranging from .64 to 1.0) demonstrating Convergent Validity. Variance shared among the construct and its respective items was greater than the average or maximum variance shared with any other construct demonstrating discriminant validity (Podsakoff & MacKenzie, 1994). Two noteworthy small violations could be noted. Procedural Rationality demonstrated a weak-to-moderate correlation with Commitment (.404). However, these two constructs tap into two distinct points in time with Procedural Rationality preceding Commitment. Procedural Rationality also demonstrated a moderate correlation with Evidence (.518). This relationship was somewhat predictable given that both occur simultaneously with one representing an “artifact” (Evidence) and the other representing the interactive inquiry around the artifact (Procedural Rationality). Neither of these inter-correlations mounted a threat to discriminant validity (Hair et al, 2010). Descriptive statistics and inter-correlations are depicted in Table A4; final construct definitions and items are listed in Table A1 in the Appendix.

Model Fit

All Goodness of Fit thresholds were met indicating a strong model (Chi-square 503.927, df = 402, p = .000); CMIN/df 1.254; CFI .955; RMSEA .043 (.03 to .054) with PCLOSE .847). The solution explained 74.272% of the variance exceeding the recommended 60% threshold. Two endogenous variables accounted for 11.336% of the variance, five exogenous variables for 51.743%, and four controls for 11.193%.

Common Method Variance (CMV)

The threat of CMV was reduced by incorporating different numerical rankings and anchor descriptions in survey questions (Doty & Glick, 1998). Harmon’s Single Factor Test (Podsakoff et al., 2003) and use of unobserved latent construct (Richardson et al., 2009) suggested no threat of significant non-congeneric common method variance.

THE STRUCTURAL MODEL

Maximum Likelihood Estimation was used allowing exogenous variables to co-vary (Hair et al., 2010). Non-significant paths were trimmed in a step-wise fashion

<table>
<thead>
<tr>
<th>Construct</th>
<th>AC1</th>
<th>AC2</th>
<th>AC3</th>
<th>AC4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective Conflict</td>
<td>0.606</td>
<td>0.864</td>
<td>0.936</td>
<td>0.850</td>
</tr>
<tr>
<td>Factor loadings</td>
<td>0.68</td>
<td>0.876</td>
<td>0.678</td>
<td>0.870</td>
</tr>
<tr>
<td>Composite reliabilities</td>
<td>0.860</td>
<td>0.7373</td>
<td>0.607</td>
<td>0.700</td>
</tr>
<tr>
<td>Average Variance Extracted (AVE)</td>
<td>0.64</td>
<td>1.0</td>
<td>0.68</td>
<td>0.870</td>
</tr>
</tbody>
</table>
| Model Fit | All Goodness of Fit thresholds were met indicating a strong model (Chi-square 503.927, df = 402, p = .000); CMIN/df 1.254; CFI .955; RMSEA .043 (.03 to .054) with PCLOSE .847). The solution explained 74.272% of the variance exceeding the recommended 60% threshold. Two endogenous variables accounted for 11.336% of the variance, five exogenous variables for 51.743%, and four controls for 11.193%.

| CC2 | 0.973 |
| CC3 | 0.860 |
| Affective Conflict | 15.456 |
| Composite reliabilities | 12.906 |
| Average Variance Extracted (AVE) | }
(Byrne, 2010). All recommended Goodness of Fit thresholds were met in the final model depicted in Figure 2 indicating a strong model fit (Chi-Square 46.732, df 34, p = .072; CMIN/df 1.374; CFI .889; RMSEA .052 (Lo .000, Hi .086), PCLOSE .433).
POST HOC TESTING

To gain a better understanding of the mechanisms involved in these relationships, we conducted a series of post hoc analyses. We utilized two approaches to examine indirect and mediated effects in a multiple serial mediator model (Hayes, 2013; MacKinnon, Lockwood & Williams, 2004; Preacher & Hayes, 2008). First, due to the post hoc nature of the analysis and our desire to minimize Type I errors, we utilized Sobel tests. Mediation was identified for two paths as follows: Logic of Action to Procedural Rationality to Evidence ($\beta = -0.09$, Aroian Test $-2.210$, $p = 0.027$) and Logic of Action to Procedural Rationality to Commitment ($\beta = -0.0712$, Aroian Test $-2.087$, $p = 0.036$).

Second, we followed up with bias-corrected bootstrap 95% confidence intervals with 10,000 Monte Carlo bootstrap samples (Hayes & Scharkow, 2013; Preacher & Hayes, 2008). Effect size for five of six mediation paths were found significant, although the magnitude of effects was modest as reflected in Table 8 below. These results may be partially influenced by the strength and sign of direct paths in the model. For example, the one pathway found non-significant (logics of action to evidence through procedural rationality and affective conflict) may be a function of opposite effect signs in the mediation pathway that would, in effect, cancel each other out ($\beta = -0.199$ between logics of action and procedural rationality while $\beta = 0.163$ between logics of action and affective conflict).

The difference between the Sobel tests and the biased-corrected bootstrap confidence intervals can likely be accounted for by two factors. First, of the tests for statistical inference in multiple mediator models, the Sobel test has the least power to detect effects when they are present (Hayes & Scharkow, 2013; Preacher & Hayes, 2008). The two direct effects emanating from procedural rationality supported in the Sobel tests were the two strongest in the model. A much larger sample may be necessary for a Sobel test to detect mediation effects in the more modest relationships. Second, the
Sobel test assumes the sampling distribution of indirect effect is normal, which is often not the case (Hayes, 2013). The bias-corrected bootstrap model does not share this assumption and thus may be the more accurate indicator.

Table 8. Bootstrap Confidence Intervals for Total Indirect Effects
95% Monte Carlo Confidence-Intervals, 10,000 Samples

<table>
<thead>
<tr>
<th>Construct Pathway</th>
<th>Mediators</th>
<th>Standardized Indirect Effect</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
<th>p-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logics of Action→Evidence</td>
<td>Procedural Rationality</td>
<td>- .052</td>
<td>- .151</td>
<td>.036</td>
<td>.235</td>
</tr>
<tr>
<td></td>
<td>Affective Conflict</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logics of Action→Cognitive Conflict</td>
<td>Procedural Rationality</td>
<td>- .042</td>
<td>- .112</td>
<td>- .007</td>
<td>.013</td>
</tr>
<tr>
<td>Procedural Rationality→Commitment</td>
<td>Cognitive Conflict</td>
<td>.033</td>
<td>.002</td>
<td>.099</td>
<td>.033</td>
</tr>
<tr>
<td>Procedural Rationality→Recreate Practice</td>
<td>Cognitive Conflict</td>
<td>.035</td>
<td>.002</td>
<td>.102</td>
<td>.035</td>
</tr>
<tr>
<td>Logics of Action→Commitment</td>
<td>Procedural Rationality</td>
<td></td>
<td>- .118</td>
<td>- .223</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Affective Conflict</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cognitive Conflict</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logics of Action→Recreate Practice</td>
<td>Procedural Rationality</td>
<td>- .007</td>
<td>- .029</td>
<td>- .001</td>
<td>.025</td>
</tr>
<tr>
<td></td>
<td>Cognitive Conflict</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FINDINGS

Overall, we tested twelve hypotheses; three hypotheses are not supported (Table XX). First, use of evidence did not increase recreation of practice as predicted in Hypothesis 1 (H1: $\beta = .145$, $p = .86$). The relationship between evidence use and recreation of practice is not supported. Second, logics of action in conflict do not increase evidence use as predicted in Hypothesis 4 (H4: $\beta = -.187$, $p = .013$), but significantly reduce evidence use. While the relationship is significant, it is opposite that hypothesized. Last, evidence use does not increase cognitive conflict as predicted in Hypothesis 10 (H10: $\beta = .109$, $p = .270$). The relationship between evidence use and cognitive conflict is nonsignificant. Although neither hypothesis related to outcomes of evidence use is supported (Hypotheses 1 and 10), evidence carries the majority of variance in the model (32.9%).

The remaining hypotheses are supported. Procedural rationality increases commitment as predicted in Hypothesis 2 (H2: $\beta = .353$, $p = .001$), increases evidence use as predicted in Hypothesis 3 (H3: $\beta = .454$, $p = .001$), and increases cognitive conflict as predicted in Hypothesis 9 (H9: $\beta = .211$, $p = .012$). Logics of action in conflict decreases procedural rationality as predicted in Hypothesis 5 (H5: $\beta = -.199$, $p = .017$) and increases affective conflict as predicted in Hypothesis 6 (H6: $\beta = .163$, $p = .056$). However, this is statistically the weakest finding in that the effect approaches significance. Affective conflict decreases commitment as predicted in Hypothesis 7 (H7: $\beta = -.254$, $p = .00$), and increases evidence use as predicted in Hypothesis 8 (H8: $\beta = .234$, $p = .001$). Finally, cognitive conflict increases both outcome variables—commitment as predicted in Hypothesis 11 (H11: $\beta = .158$, $p = .039$) and recreation of practice as predicted in Hypothesis 12 (H12: $\beta = .166$, $p = .048$).
Table 6. Results of Hypothesis Testing

<table>
<thead>
<tr>
<th>H</th>
<th>INDEPENDENT VARIABLE</th>
<th>RELATION</th>
<th>DEPENDENT VARIABLE</th>
<th>Support</th>
<th>Est.</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Evidence</td>
<td>Increases</td>
<td>Recreation of Practice</td>
<td>no</td>
<td>.145</td>
<td>.86</td>
</tr>
<tr>
<td>2</td>
<td>Procedural Rationality</td>
<td>Increases</td>
<td>Commitment</td>
<td>YES</td>
<td>.353</td>
<td>***</td>
</tr>
<tr>
<td>3</td>
<td>Procedural Rationality</td>
<td>Increases</td>
<td>Evidence</td>
<td>YES</td>
<td>.454</td>
<td>***</td>
</tr>
<tr>
<td>4</td>
<td>Logics of Action in Conflict</td>
<td>Increase</td>
<td>Evidence</td>
<td>no</td>
<td>-.187</td>
<td>.013</td>
</tr>
<tr>
<td>5</td>
<td>Logics of Action in Conflict</td>
<td>Decrease</td>
<td>Procedural Rationality</td>
<td>YES</td>
<td>-.199</td>
<td>.017</td>
</tr>
<tr>
<td>6</td>
<td>Logics of Action in Conflict</td>
<td>Increase</td>
<td>Affective Conflict</td>
<td>YES</td>
<td>.163</td>
<td>.056</td>
</tr>
<tr>
<td>7</td>
<td>Affective Conflict</td>
<td>Decreases</td>
<td>Commitment</td>
<td>YES</td>
<td>-.254</td>
<td>***</td>
</tr>
<tr>
<td>8</td>
<td>Affective Conflict</td>
<td>Increases</td>
<td>Evidence</td>
<td>YES</td>
<td>.234</td>
<td>***</td>
</tr>
<tr>
<td>9</td>
<td>Procedural Rationality</td>
<td>Increases</td>
<td>Cognitive Conflict</td>
<td>YES</td>
<td>.211</td>
<td>.012</td>
</tr>
<tr>
<td>10</td>
<td>Evidence</td>
<td>Increases</td>
<td>Cognitive Conflict</td>
<td>no</td>
<td>.109</td>
<td>.27</td>
</tr>
<tr>
<td>11</td>
<td>Cognitive Conflict</td>
<td>Increases</td>
<td>Commitment</td>
<td>YES</td>
<td>.158</td>
<td>.039</td>
</tr>
<tr>
<td>12</td>
<td>Cognitive Conflict</td>
<td>Increases</td>
<td>Recreation of Practice</td>
<td>YES</td>
<td>.166</td>
<td>.048</td>
</tr>
</tbody>
</table>

While no mediation hypotheses are posited, conservative post hoc analyses revealed procedural rationality operates as a significant mediatior between logics of action and evidence ($\beta = -.09$, Aroian Test -2.210, $p=.027$) as well as between logics of action and commitment ($\beta = -.0712$, Aroian Test -2.087, $p = .036$). In other words, procedural rationality serves as a mechanism for evidence-use and commitment to decision in situations of shared decision making characterized by conflict. A comparison of total indirect effects demonstrates that procedural rationality can serve as a mechanism to cultivate commitment in these scenarios (.53) that is twice as strong as the damaging effects of increased affective conflict (.26). In addition, cognitive conflict emerged as a significant mechanism between procedural rationality and both commitment to decision ($a_1b_1= .033$, CI = .022 to .099, $p = .033$) and recreation of practice ($a_1b_1= .035$, CI = .002 to .102, $p = .035$).

DISCUSSION

We set out to test a model for EBMgt practice that would begin to identify contextual elements and routines that support or impede meaningful outcomes of EBMgt in actual practice. In particular, we hoped to shape recommendations for effective use of EBMgt in shared leadership settings. The proposed model introduces a new skill for EBMgt in practice—the collaborative search for and analysis of evidence. We examined the simultaneous influence of evidence, process, and conflict in collaborative decision making groups where patterns of reasoning between professional groups were in conflict. We focused on predicting two meaningful organizational outcomes of EBMgt—commitment to decision and diffusion of practices.

Twelve hypotheses were advanced using a multiple mediator model allowing analysis of constructs linked in a serial fashion. Three hypotheses addressed the ways in which the local context influenced the enactment of EBMgt in practice. Five hypotheses captured the impact of evidence use and the process in which it was used on meaningful outcomes including conflict, commitment and diffusion. Finally, four hypotheses targeted the influence of conflict on evidence use or outcomes. Overall, nine hypotheses
related to context and process were supported while three hypotheses related to evidence use were unsupported.

We start the discussion with the strongest findings identifying collaborative search for and analysis of evidence as a pivotal element for success of EBMgt in practice by shared decision making groups in conflict. The dynamics of cognitive conflict will contribute to this discussion. Next we address findings that show the context in which EBMgt is introduced influences the way in which it is enacted. The dynamics of conflicting logics of action and affective conflict illuminate this discussion. Finally, we consider two unsupported hypotheses regarding the evidence itself and provide an alternative explanation for the role of evidence in these group scenarios. We close by revisiting the two broad questions that framed the study: “Is EBMgt a viable approach to shared decision-making?” and, “What are the contextual elements and routines that support or impede actual outcomes of EBMgt in practice in these settings?”

**Procedural Rationality**

The procedural rationality of collaborative search and analysis of evidence advanced by this study is a new skill for EBMgt in practice. Our results identify procedural rationality as a pivotal element for success when EBMgt is used by shared decision making groups in conflict. First, procedural rationality strongly increases use of evidence (Hypothesis 3). While this is not surprising since the goal of procedural rationality is to discover evidence, this finding provides support for its effectiveness in practice. Second, procedural rationality stimulates cognitive conflict (Hypothesis 9) which then serves as a mediator between procedural rationality and both outcomes of commitment (Hypothesis 11) and recreation of practice (Hypothesis 12). In other words, the process of collaborative search for and analyses of evidence strengthens commitment in its own right, and serves as the gateway to constructive cognitive engagement in these conflicted settings. This cognitive engagement further strengthens commitment and individual willingness to introduce more systematic routines into subsequent decision making processes in other organizational arenas. Surprisingly, procedural rationality is the strongest predictor of decision commitment in the model (Hypothesis 2). That is, commitment springs from procedural rationality and the cognitive conflict it engenders rather than the artifacts of evidence, per se. Indeed, collaborative search and analysis creates the social investment necessary for effective implementation of decision. As such, procedural rationality can be a powerful instrumental tool for building commitment in shared decision groups characterized by conflicting logics of action.

**Logics of Action**

Our results indicate that conflicting logics of action do, indeed, influence the way EBMgt is enacted in practice. Consistent with our predictions, when logics of action are in conflict, less procedural rationality is enacted (Hypothesis 5) and more affective conflict is generated (Hypotheses 6). Affective conflict, in turn, increases use of evidence (Hypothesis 8) and decreases commitment (Hypothesis 7). This study suggests the practice of EBMgt in collaborative decision-making groups is likely to be unpleasant.
and unproductive when conflicting logics of action between professional groups are unaddressed or not managed well. Areas of divergence between groups can be channeled into personalized disputes that inflame additional animosities and incite wars of ‘dueling data.’ Decisions that emerge from the group are likely to be accompanied by passive compliance or active undermining that can scuttle implementation. These findings support the general conclusion in the literature that affective conflict is a damaging element in group decision making. However, our findings also point to the productive difference procedural rationality can make. The collaborative search for and analysis of evidence can provide a positive countervailing force to affective conflict. Total indirect effects demonstrate that the positive relationship between procedural rationality and commitment is twice as strong as the damaging effects of affective conflict.

Contrary to our predictions, conflicting logics of action decrease the use of evidence in collaborative decision making groups (Hypothesis 4). Without the intervention of procedural rationality or the agitation of affective conflict, the default position in these scenarios is to use less evidence. Rather than evidence serving to bolster power as hypothesized, there may be a general sense of resignation in the face of intractable differences between professions within the organization. In our setting, while the shared decision making groups required by the accreditation board are a new addition to the organizational repertoire, people may simply expect well-established conflicted logics of action to dominate the process. As noted by Lundgren & Prislin (1998: 720) in their study of motivated cognitive processing, “Without a strong motivation, people avoided effortful, relevant information seeking and engaged in diffuse, non-relevant thinking.”

Evidence

Last we turn to the remaining two unsupported hypotheses. Evidence neither increased cognitive conflict (Hypotheses 10) nor increased recreation of the practice (Hypotheses 1). Of further note is the absence of relationship between evidence and commitment. These findings leave us wondering about the role evidence itself plays in developing commitment to decision and recreation of the practice. At first glance, these results may appear contrary to our hypothesized status of evidence as a boundary object that provides an objective focus to be readily introduced into subsequent decision groups. But the path coefficients tell only part of the story. In the broader model context, the evidence construct carries 32.9% of variance and, hence, a great deal of explanatory power. So what’s going on?

One possibility might be the “magnitude of invisible work” involved in these complex interactions. Star (2010: XX) discussed this concept in her clarification of boundary objects based on an ethnographic and historical study of neurophysiology and brain surgery. While analyzing Dr. David Ferrier’s original notebooks, she came across the following sentence, “The ape was less than cooperative.” At this point the pages were stained with “blood, tissue preservative, and other undocumented fluids” (Star, 2010, XX). It occurred to her that there is a great deal of action involved in scientific reasoning that is essential to the evolving process of discovery that is not addressed in the final presentation, and therefore invisible. In the context of EBMgt, findings from
empirical studies may serve a similar role. They can be essential to the emergent process of decision making, but not directly reflected in the final outcomes. Of course, this flies in the face of theoretical models of EBMgt that portray the sole purpose of evidence as an instrumental one in dictating a decision. As a result, this possibility may not be well accepted by the dominant voices in EBMgt research.

There is, however, another alternative. Rather than evidence serving as a tertiary boundary object that provides a ‘container’ for cognitive conflict, evidence may stimulate engagement of a different sort. Star goes on to observe that Ferrier’s article about the 
\textit{human} brain was wildly successful despite the fact that all his conclusions were based on study of a \textit{monkey} brain. Star concluded that the study served as a sort of map that,

\begin{quote}
\ldots need not be accurate to be useful. It could serve as the basis for conversation, for sharing data, for pointing to things—without actually demarcating any real territory. It was a good communicative device across…the worlds of clinical and basic research. Its mediatational quality seems to be that it ‘sat in the middle’ between different groups.
\end{quote}

Likewise, in the context of EBMgt, the evidence need not present an exact instrumental solution for a specific problem to be useful. There may not be an exact translation between scholarly research and direct practice, but it can serve a central role in crafting solutions appropriate within the complex dynamics of the organization. Thus, research evidence may serve as a catalyst for creative discussion. Nicolini and his colleagues (2012: xx) discovered that when an object “presented a puzzle, required investigation, and visibly posed a challenge…it generated collective problem solving sustained by discursive practices.” This suggests a very different mediating process. Rather than engaging a deliberate focus on cognitive differences, perhaps evidence engages focused attention fueled by inquiring minds. Perhaps evidence discovered in a process of joint inquiry ignites the intrigue of bright and creative minds crafting a yet unknown solution for the future in their particular locale. Curiosity, rather than cognitive conflict, may be the mediator that leverages evidence toward decision commitment.

\textbf{Our Guiding Questions}

We now arrive at the point at which we started—the guiding questions behind the study. Our findings indicate that EBMgt can, most certainly, be a viable approach to shared decision making in circumstances where conflict is present. More specifically, EBMgt can be used in these situations to increase commitment to decision as well as willingness to recreate the practice of EBMgt in subsequent shared decision making scenarios within the organization. Accordingly, our findings indicate that practicing EBMgt in these settings can improve the process and outcome of decision making in organizations, thereby answering a key question advanced in the literature (CITES). Consequently, this may be one of the first empirical studies to demonstrate the actual impact of EBMgt on meaningful outcomes related to organizational performance (CITE).

There are, however, some caveats. First, the dynamics of local context will influence the way in which EBMgt is enacted. Our findings indicate, where conflicting
logics of action between professional groups exist, there is likely to be less evidence use, less procedural rationality (and more affective conflict) despite regulatory mandates from accrediting bodies for an evidence-based approach to shared decision making. This finding helps to fill a gap identified by Detert and colleagues (2000) for understanding the impact of organizational ecology on the implementation of EBMgt.

Second, both procedural rationality and affective conflict appear to be catalysts for increased evidence use in these scenarios, one by design and one by defense. However, in the absence of procedural rationality, introduction of evidence to shared decision making in these scenarios holds great potential for harm. Our findings indicate that the affective conflict that drives use of evidence also damages commitment to decision. Decisions that emerge from the group are likely to be accompanied by passive compliance or active undermining that can scuttle implementation. As such, this study lends credence to the warning advanced by Potworowski & Green (2012) that EBMgt may engender unanticipated negative effects in certain contexts.

Last, procedural rationality appears to be a pivotal routine to the practice of EBMgt in these settings. The collaborative search for and analysis of evidence spurs more evidence use, increased occurrence of productive cognitive conflict, stronger commitment to the eventual decision and enhanced willingness to recreate EBMgt practices in subsequent decision making groups throughout the organization. The strong positive relationship between procedural rationality and commitment along with its countervailing force to affective conflict lends support to the value of conscientious, explicit and judicious use of research evidence expounded in the literature (CITES). Indeed, deliberate attention and collaborative analysis of evidence supporting diverse perspectives can improve both the process and outcome of shared decision making in organizations.

LIMITATIONS

The thoughtful construction of any research endeavor by its very nature limits the generalizability of the findings in some fashion. The present study is no exception. First is the generally high level of education attainment in this sample. While this distribution will likely be similar to that found in professional service firms, it may be uncharacteristic of general management settings. Nevertheless, the skill set that accompanies this level of education allowed us to rule out some of the common barriers to EBMgt cited in the literature. As a result, we were able to look deeper in the interpersonal dynamics involved in this approach to management. Of course, having additional constructs in the model to account more directly for motives behind the introduction of evidence would have taken us even further down this path.

With regard to the research model, three points warrant comment. First, we neither controlled for leadership styles, nor decision framing in the model. While the importance of these variables is established in the literature, the complex nature of these factors within groups and between schools in the sample made conceptualization and measurement equally complex. Further, given the prospect of a potentially limited sample due to the specificity of quality improvement groups in these organizations, inclusion of these additional factors was statistically risky. In the end, we opted for a
conservative approach for these first steps toward empirical inquiry into impacts of EBMgt on meaningful organizational impacts.

Second, we did not control for the quality of evidence used, how it was used to influence decision, nor how it shaped the final decision. Instead, we expanded the conceptualization of evidence to that of a boundary-object that frames issues and provides a cognitive focus for dialogue between diverse interests. While this view is consistent with classics in organizational literature, it does fall outside current theories of EBMgt in academic circles. We expect this strategy to meet with mixed reviews.

Third, we made a conscious decision to delimit our recreation of practice construct in terms of concrete tasks and behaviors. Instead, we adopted a practice perspective that acknowledges the complex and often indefinite nature of change in motion. We expect this approach to, likewise, meet with mixed reviews.

The choice of measurement model specification is worthy of note here as well. The two exogenous constructs included could, on their surface, appear to be formative rather than reflective (Diamantopoulos & Winklhofer, 2001). These distinctions are not necessarily clear. Due to theoretical overlap in the items, they may actually tap into the same underlying processes making reflective modeling appropriate (Diamantopoulos & Siguaw, 2006). From a statistical point of view, RMSEA has been identified as the best index for detecting measurement model misspecification (MacKenzie, Podsakoff & Jarvis, 2005). The acceptable RMSEA in the both the CFA and SEM models provide confidence in the validity of our findings. Finally, there are likely recursive elements involved between the elements of EBMgt practice and the two types of conflict that are beyond the scope of our first steps into this territory.

**IMPLICATIONS FOR RESEARCH AND PRACTICE**

If EBMgt theory was viable material for earning a Boy Scout badge, the image on the insignia might be the upper torso of a manager seated behind a desk with a research article in hand. That is, according to current conceptualizations of EBMgt, it is something done by practitioners (the manager) invested with decision authority (the desk) by utilizing systematic reviews of research (the article). Missing from the image, however, are three other types of evidence recommended for EBMgt: “practitioner expertise and judgment, evidence from the local context, and the perspectives of those people who might be affected by the decision” (CITE:pg). The manager’s legs and feet are equally conspicuous in their absence. These are all missing from the image because thus far, EBMgt literature has been silent on the moves a manager must make to orchestrate and facilitate these interactive processes.

This study is unique in its attempt to introduce these missing elements into empirical inquiry around EBMgt. Our study design is built from the pragmatism of a practice-perspective that focuses on the embodied concrete action of practitioners embedded in specific contexts. Accordingly, we acknowledge the inevitable influence of interpersonal relationships and conflict that occurs as experts and stakeholders with divergent perspectives engage with evidence toward construction of a mutually satisfactory decision.
For theorists, this approach stretches the epistemological territory of EBMgt by placing people, their activity, and their relationships at the center of analysis and relegating evidence to a secondary, but no less important, role. This perspective also softens the boundaries between structure and agency, thereby offering the possibility of insight into the ways in which they mutually constitute one another. Hence, we open a window to offer EBMgt the breeze of a social theory of practice. Our results are also a reminder that there are many uses of evidence for influencing organizational behavior. Instrumentally guiding a technical decision is but one use. Evidence can also serve as a boundary-object to structure dialogue and may serve as an epistemic-object that engages the intrigue of professionals toward designing an as yet unknown solution to a specified challenge. Finally, our results are a reminder that decision and action can be worlds apart. There is much scholarly work to be done to account for the landscape between these two points.

For practitioners, this approach holds the hope of specific and relevant recommendations for practice. Our results indicate that EBMgt may not work equally well in every organization or every decision situation. The presence of different patterns of reasoning between professional groups in an organization can hinder the implementation of EBMgt in decision making. Practitioners must be aware of dynamics that can lead to the selective presentation and acceptance of evidence that supports a favored viewpoint, to the exclusion of valid evidence that opposes it or suggests a better alternative. Acknowledgement of affective conflict is equally important as it contributes to these dynamics and damages commitment to the eventual decision. Fortunately, this study also provides a potential remedy for these challenges. Routines of procedural rationality for the collaborative search for and analysis of evidence can be a powerful activity to counteract these damaging influences.

Finally, both scholars and practitioners will benefit from the awareness that mandates from regulatory bodies for adoption of evidence-based decision-making hold potential for doing more harm than good. Our study reinforces the findings of previous studies (Bacharach et al., 1996) that indicate logics of action appear to be a greater determining factor in the actual everyday local interactions of people than regulatory mandates. Within this sample of highly educated professionals, individuals appear constrained in their ability to effectively employ strategies outside the bounds sustained by entrenched collective identities regardless of potential institutional consequences for the failure to do so. As Bacharach and his colleagues (1996: 481) observe, “While environmental shifts may lead to the initiation of new policies and practices at the institutional level, actors at the core (i.e., managerial and technical) levels are likely, at least in the short-run, to cling to old attitudes and behaviors inconsistent with the institutional actors’ new ideas.”

Consequently, institutional imposition of regulatory mandates for collaborative, evidence-based decision groups may do more harm than good in the absence of guidance on how to best manage conflicting logics of action. Otherwise, patterns of difference may simply be reinforced and perpetuate undercurrents of affective conflict that damage commitment necessary for effective action. Ultimately, if shared decisions cannot be effectively implanted within the institution, accreditation status may be placed in
jeopardy. These results highlight once again that EBMgt is not just about the evidence; more is necessary. Effective evidence-based decision making in collaborative groups requires attention to processes that facilitate constructive engagement with the social and political forces within the organization to create understanding of how these activities shape the use of evidence in shared decision making.

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## APPENDIX

### TABLE A1
Construct Definitions and Items

<table>
<thead>
<tr>
<th>CONSTRUCT</th>
<th>DEFINITION</th>
<th>FINAL ITEMS</th>
<th>Factor Load</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Procedural</strong></td>
<td><strong>Rationality</strong></td>
<td>With regard to making decisions in the committee, how extensively did the committee…</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extent to which the decision process involves the search and analysis of relevant information</td>
<td>*PR1 Look for information?</td>
<td>.920</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*PR2 Analyze relevant information?</td>
<td>.659</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*PR3 Use quantitative analytic techniques?</td>
<td>.529</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*PR4 Focus attention on crucial information and ignore irrelevant information?</td>
<td>.744</td>
</tr>
<tr>
<td><strong>Evidence</strong></td>
<td>Types of information utilized in decision-making process</td>
<td>With regard to making decisions in the committee, to what extent did the committee consider…</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>*EM1 Benchmarking data related to progress of other colleges?</td>
<td>.628</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*EM2 Practices from the accreditation website or conferences?</td>
<td>.693</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*EM3 Empirical research from peer-reviewed journals?</td>
<td>.924</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*EM4 Information from professional association magazines, newspapers, web-sites, or newsletters?</td>
<td>.930</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*EM5 Research from funding sources?</td>
<td>.854</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EM6 Statistical information from your college?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EM7 Results of internally generated institutional surveys?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>EM8 Results of analytical studies conducted by your college’s institutional research staff?</td>
<td></td>
</tr>
<tr>
<td><strong>Cognitive</strong></td>
<td><strong>Conflict</strong></td>
<td>During committee meetings, to what extent did committee members…</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Task-oriented conflict focused on judgment differences about how to best achieve common objectives</td>
<td>*CC1 Express differences of opinion?</td>
<td>.857</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*CC2 Voice differences about the content of proposed solutions?</td>
<td>.991</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*CC3 Communicate disagreements over different ideas?</td>
<td>.852</td>
</tr>
<tr>
<td><strong>Affective</strong></td>
<td><strong>Conflict</strong></td>
<td>During committee meetings, to what extent did committee members…</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emotional conflict focused on personal incompatibilities or disputes</td>
<td>*AC1 Openly expressed anger?</td>
<td>.593</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*AC2 Experience friction between one another?</td>
<td>.873</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*AC3 Experience personality clashes between one another?</td>
<td>.965</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*AC4 Experience an uncomfortable level of tension?</td>
<td>.905</td>
</tr>
<tr>
<td><strong>Commitment</strong></td>
<td>Belief in inherent benefits of the change. Emotional attachment to and identification with the change.</td>
<td>With regard to the recommended changes that emerged from your committee, to what extent do you agree or disagree with the following statements?</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C1 I believe in the value of this change.</td>
<td>.719</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C2 This change is a good strategy for this organization.</td>
<td>.629</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C3 I think that the college is making a mistake by introducing this change. (R)</td>
<td>.926</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C4 This change serves an important purpose.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C5 Things would be better without this change. (R)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>C6 This change is not necessary. (R)</td>
<td></td>
</tr>
<tr>
<td><strong>Recreation</strong></td>
<td><strong>Of Practice</strong></td>
<td>As a result of your accreditation committee experience, do you engage in more or less of the following behavior in other college committees on which you serve?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Actions taken to improve the functioning of subsequent college committees on which they serve</td>
<td>*TC1 Try to change how committees are run in order to be more effective.</td>
<td>.792</td>
</tr>
<tr>
<td></td>
<td></td>
<td>*TC2 Try to correct faulty procedures or practices within committees.</td>
<td>.951</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TC3 Introduce new technologies to improve committee efficiency.</td>
<td>.770</td>
</tr>
<tr>
<td>Conflicting Logics Of Action</td>
<td>Perceived level of conflict between faculty &amp; administrators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TC4</td>
<td>Make constructive suggestions for improving how things operate within the committees.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TC5</td>
<td>Introduce data and research findings into committee discussions.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With regard to relationships between faculty &amp; administration at your college, to what extent do you agree or disagree with the following statements?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*FA1 Faculty &amp; administration are mutually supportive of one another. (R)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*FA2 The faculty and administration are hostile toward each other.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FA3 I trust information I receive from faculty representatives.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FA4 I trust information I receive from administrative representatives.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FA5 You can’t be a faculty member and support the administration at the same time.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FA6 You can’t be an administrator and support the faculty at the same time.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FA7 Faculty and administration are natural enemies.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*FA8 Relationships between faculty and administration are satisfactory. (R)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job Satisfaction</th>
<th>Attitude of satisfaction with and interest in one’s job.</th>
</tr>
</thead>
<tbody>
<tr>
<td>With regard to your current job, to what extent do you agree with the following statements?</td>
<td></td>
</tr>
<tr>
<td>*JS1 I find real enjoyment in my job.</td>
<td></td>
</tr>
<tr>
<td>*JS2 I like my job better than the average person</td>
<td></td>
</tr>
<tr>
<td>*JS3 I am seldom bored with my job.</td>
<td></td>
</tr>
<tr>
<td>JS4 I would not consider taking another kind of job.</td>
<td></td>
</tr>
<tr>
<td>JS5 Most days I am enthusiastic about my job.</td>
<td></td>
</tr>
<tr>
<td>JS6 I feel fairly well satisfied with my job.</td>
<td></td>
</tr>
</tbody>
</table>

* Items retained after EFA and CFA
TABLE A2
Typical Sources for Information in Each Evidence Category

<table>
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<tr>
<th>Evidence Category</th>
<th>Sources</th>
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<tbody>
<tr>
<td>Benchmarking</td>
<td>The Completion Arch [<a href="http://completionarch.collegeboard.org/">http://completionarch.collegeboard.org/</a>]</td>
</tr>
<tr>
<td></td>
<td>State Board of Regents</td>
</tr>
<tr>
<td></td>
<td>Accreditation Commission Board Site [<a href="http://www.aspeninstitute.org/policy-work/college-excellence">http://www.aspeninstitute.org/policy-work/college-excellence</a>]</td>
</tr>
<tr>
<td></td>
<td>The Aspen Institute [<a href="http://www.aspeninstitute.org/policy-work/college-excellence">http://www.aspeninstitute.org/policy-work/college-excellence</a>]</td>
</tr>
<tr>
<td></td>
<td>Center for Community College Engagement [<a href="http://www.ccsse.org/center/initiatives/highimpact/index.cfm">http://www.ccsse.org/center/initiatives/highimpact/index.cfm</a>]</td>
</tr>
<tr>
<td></td>
<td>Community College Completion Challenge [<a href="http://www.cccompletionchallenge.org/">http://www.cccompletionchallenge.org/</a>]</td>
</tr>
<tr>
<td>Empirical Research from</td>
<td>Community College Journal of Research and Practice</td>
</tr>
<tr>
<td>Peer Reviewed Journals</td>
<td>Community College Review</td>
</tr>
<tr>
<td></td>
<td>The Journal of Excellence in College Teaching</td>
</tr>
<tr>
<td></td>
<td>The Journal of Higher Education</td>
</tr>
<tr>
<td></td>
<td>Research in Higher Education</td>
</tr>
<tr>
<td></td>
<td>The Review of Higher Education</td>
</tr>
<tr>
<td>Professional Associations</td>
<td>American Association of Community Colleges [<a href="http://www.aacc.nche.edu/Publications/Briefs/Pages/default.aspx">http://www.aacc.nche.edu/Publications/Briefs/Pages/default.aspx</a>]</td>
</tr>
<tr>
<td>Or News Sources</td>
<td>[<a href="http://www.aacc.nche.edu/Publications/Reports/Pages/default.aspx">http://www.aacc.nche.edu/Publications/Reports/Pages/default.aspx</a>]</td>
</tr>
<tr>
<td></td>
<td>The Chronicle of Higher Education</td>
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<td></td>
<td>Change</td>
</tr>
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<td></td>
<td>Community College Research Center</td>
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<td></td>
<td>[<a href="http://ccrc.tc.columbia.edu/our-research.html">http://ccrc.tc.columbia.edu/our-research.html</a>]</td>
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<td>Funding Sources</td>
<td>Achieving the Dream [<a href="http://achievingthedream.org/">http://achievingthedream.org/</a>]</td>
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<td></td>
<td>Bill &amp; Melinda Gates Foundation</td>
</tr>
<tr>
<td></td>
<td>Lumina Foundation [<a href="http://www.luminafoundation.org/">http://www.luminafoundation.org/</a>]</td>
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**TABLE A3**  
Descriptive Statistics and Construct Inter-Correlations

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<th>Factor</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>Mean</th>
<th>SD</th>
<th>CR</th>
<th>AVE</th>
<th>MSV</th>
<th>ASV</th>
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<tbody>
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<td>1 Evidence</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>2.88</td>
<td>1.06</td>
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<td>.03</td>
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<td>2 Procedural Rationality</td>
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<td></td>
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<td></td>
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<td></td>
<td>4.02</td>
<td>0.80</td>
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<td>.60</td>
<td>.07</td>
<td>.05</td>
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<td>3 Commitment</td>
<td>.049</td>
<td>.404</td>
<td>1.00</td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td>6.25</td>
<td>0.98</td>
<td>.84</td>
<td>.64</td>
<td>.04</td>
<td>.02</td>
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<td>4 Recreation</td>
<td>.155</td>
<td>.124</td>
<td>.043</td>
<td>1.00</td>
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<td>0.98</td>
<td>.87</td>
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<td>5 Logics</td>
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<td>.080</td>
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<td>7 Affective Conflict</td>
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<td>8 Job Satisfaction</td>
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<td>.390</td>
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<td>1.13</td>
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<td>9 Time</td>
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<td>.009</td>
<td>-.164</td>
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